Radio Wireless Week

19 - 22 January 2014, Newport Beach, CA, USA

IEEE MTT-S

http://www.radiowirelessweek.org/

Join Us for a Week Long Wireless Event "Next Wireless Innovation" At the Newport Beach Marriott Hotel & Spa

Join us for the 9th annual IEEE Radio Wireless Week (RWW) in Newport Beach, California from 19- 22 January 2014. This exciting week includes the IEEE Radio and Wireless Symposium (RWS) and the IEEE Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems (SiRF). Join us to learn about the latest in the wireless technologies and networks with colleagues while enjoying the beautiful ocean view of southern California.

RWW: ***IEEE Radio Wireless Week***
RWS: ***IEEE Radio and Wireless Symposium***
PAWR: ***IEEE Topical Meeting on Power Amplifiers for Wireless and Radio Applications***
SiRF: ***IEEE Topical Meeting on Silicon Monolithic Integrated Circuits on RF Systems***
BioWireleSS: ***IEEE Topical Conference on Biomedical Wireless Technologies, Networks, and Sensing Systems***
WiSNet: ***IEEE Topical Meeting on Wireless Sensors and Sensor Networks***

Highlights

Technical Oral Sessions - Mon/Wed, 20-22 Jan., 2014
Interactive Poster Sessions - Mon/Wed, 20-22 Jan., 2014
Student Paper Competition Finals - Mon, 20 Jan., 2014
Demo Session - Tue, 21 Jan., 2014
Plenary Talk - "THz imaging for Biomedical Applications"
Workshops
Power Amplifier, Radar Systems/Biomedical Radar, RF Energy Harvesting, etc.
Panel Sessions
Future of Wireless Communications, Emerging PA Breakthrough, THz Wireless Communications, etc.
Distinguished Lecturer Talks
Monday morning Distinguished Lecturer session featuring four prominent speakers. For more information, Advance Program will be available at http://www.radiowirelessweek.org/

Exhibits and Sponsorship Opportunity

This year's Exhibit will offer tabletops and full 10×10 exhibits. The exhibition will operate on Monday and Tuseday, with a special offer for Sunday Set-ups. WirelessApps talks and Demo Sessions will also be held in the Exhibition area. Rental fees for 2014 are $1200 per tabletop booth space and $1500 per 10×10 booth space. Sponsors at the $3000 level and above will be offered one free 10×10 booth space. In 2011, 2012 and 2013 the exhibition was SOLD OUT so please book early in order to insure premium exhibit space. For more about exhibits and sponsorship, visit http://www.radiowirelessweek.org/exhibits/

Technical Program for 2014 Radio Wireless Week (RWW)

SUNDAY, 19 JANUARY 2014

Sunday Workshops 13:00-17:00

PA Design: From Device Model to High-Performance Circuit

Room: Baycliff

Organizers:
José A. García, University of Cantabria, Spain
Zoya Popovic, University of Colorado at Boulder, CO, USA

Power amplifiers (PA) have a vital role in modern wireless communication and sensor systems. The requirements for simultaneously providing improved efficiency and linearity, multi-band or broadband coverage, together with those of high output power and frequency of operation, have been forcing an aggressive evolution of design techniques. In order to arrive to an optimal practical solution, advancements at the device modeling level are necessarily combined with novel amplifying circuit topologies and with system level considerations, where the digital processing of the signal may offer additional benefits.
This workshop will address a wide variety of topics related to PA design. Starting with an overview presentation, covering technology and design issues at microwave and millimeter-wave bands, the relevance of dedicated characterization procedures and accurate transistor models will be highlighted. A wide variety of power MMIC designs, based on the disruptive GaN HEMT technology, will be then described, in which PAs are complemented by associated circuitry (limiters and switches). Harmonically terminated and switched-mode amplifying theory can be shown to lead to multi-band and broadband architectures, integrated in high performance Doherty topologies. The application of these and other high efficiency techniques to mm-wave PAs will be also under consideration for Si and SiGe processes. Finally, wideband and efficient solutions based on load modulation concepts, such as the Doherty and outphasing techniques, are covered in a common framework.

Speakers:

Microwave and Millimeter-Wave Power Amplifiers: Devices, Technology, Design, Benchmarks
James Komiak, BAE Systems

Device Modeling for PA Design
Stéphane Dellier, AMCAD Engineering

High Power GaN MMICs
Charles Campbell, Triquint

Design Strategies for High Efficiency PAs
Paolo Colantonio, University of Rome Tor Vergata

High Efficiency Techniques for Millimeter-Wave PAs in Silicon/Silicon Germanium Processes
James F. Buckwalter, University of California, San Diego

Wideband and Efficient Power Amplifiers based on Advanced Doherty and Outphasing Techniques
Christian Fager, Chalmers University of Technology

Diversity in Biomedical Radar Applications

Room: Cardiff

Organizers:
Dominique Schreurs, KU Leuven, Belgium.
Changzhi Li, Texas Tech University., TX, USA

Radars are traditionally associated with traffic and defense applications. In recent years, their distinctive advantage in biomedical applications has been recognized. Biomedical radars offer remote and thus contactless and non-invasive monitoring. This workshop presents an overview on the diversity in biomedical radar uses. Applications range from vital signs monitoring, human gait tracking, tumor tracking, fall detection, to cancer detection, etc. The underlying operational principles can usually be traced down to either CW or UWB radar techniques, and therefore a panel discussion is planned to explore the pros and cons of each approach.

Speakers:

True Human Presence Detection with Doppler Radar Occupancy Sensors
Victor Lubecke, University of Hawaii, USA

System-on-Chip UWB Pulse Radar for Contactless Detection of Respiratory Patterns in Adults and Infants
Domenico Zito, University of Cork, Ireland

SFCW Radar for Contactless Fall Detection and Human Gait Monitoring
Dominique Schreurs, KU Leuven, Belgium

Microwave Imaging at the University of Calgary: Prototype Systems and Patient Studies
Elise Fear, University of Calgary, Canada

Use of CW Radar for Tumor Tracking in Motion-Adaptive Cancer Radiotherapy
Changzhi Li, Texas Tech University, USA

UWB vs. (SF)CW Approaches in Biomedical Radars
Panel Discussion

RF Energy Harvesting: Challenges and Applications

Room:Laguna/Sunset

Organizers:
A. Georgiadis CTTC, Spain
Manos M. Tentzeris, Georgia Institute of Technology, USA

Ambient RF energy harvesting and RF power transmission enable the wireless powering of sensors, RFIDs and communication nodes. Advances in rectenna, voltage conversion and energy management circuits, complemented by progress in low power and power efficient circuit and sensor design, have spurred numerous research efforts and have enabled new innovating applications towards ubiquitous sensing and machine-to-machine communication.
There are numerous challenges to be addressed, such as compact antennas and efficient voltage conversion circuits, system architectures, signal design for maximum power transfer, and the trade-off between information and power transmission. This workshop provides an insight to RF energy harvester devices and their applications. The speakers will interact with the attendees emphasizing on future trends, expectations and opportunities of RF energy harvesting as well as practical design aspects and performance evaluation.

Speakers:

Multiband RF energy harvester design and signal optimization for maximum RF-DC conversion efficiency
Ana Collado, CTTC , Spain

Inkjet-Printed Nanotechnology-Enabled IoT Inter/Intra-chip and "Zero-Power
Manos Tentzeris, Georgia Institute of Technology, USA

Design rules for energy autonomous systems powered by ambient-available RF sources
Alessandra Costanzo, University of Bologna, Italy

Wireless powering of battery-less sensors through low power RF energy harvesting
Zoya Popovic, University of Colorado, Boulder, USA

Chipless tag evolution toward RFID-sensors for IoT
Luca Roselli, University of Perugia, Italy, Co-Authors: F. Alimenti, C. Mariotti, M. Virili, G. Orecchini, P. Mezzanotte

Recent Advances On Radar Systems for Defense/ Security, Localization and Other Emerging Applications

Room: Newport coast Ballroom 1/2

Organizers:
Roberto Gómez-García, University of Alcalá, SPAIN
Arjuna Madanayake, University of Akron, OH, USA

This workshop explores recent achievements in the exciting field of radar systems for defense/security, public safety, weather, RF imaging & sensing, source localization and other emerging applications. The workshop presents several state-of-art topics covering key aspects in radar.
The first talk addresses the utilization of IR-UWB radar sensors for the detection of trapped survivors under collapsed buildings in post-disaster scenarios. In the second talk, sophisticated backscatter transponder architectures operating at the millimeter wave range are presented for secondary radar-based localization. The third talk explores the field of multi-band radar as a further step in research into remote-sensing systems having enhanced capabilities. The fourth topic deals with noncontact detection of small mechanical vibrations and biological signals using Doppler radar sensors. Talk number five discusses findings from bleeding edge research on RFIC phased arrays having applications in automotive radars. Finally, the last talk discusses multi-dimensional signal processing techniques for apertures directed at radar and other steerable aperture applications.

Speakers:

A Dual-frequency IR-UWB Radar System for Detection of Trapped Survivors in Post-disaster Scenarios
Zhao Li, Hao Lv, Yang Zhang, Xijing Jing, and Jianqi Wang, Fourth Military Medical University, Xi'an, China

Millimeter Wave Backscatter Transponders for Secondary Radar-Based Localization
Wadim Stein, Christian Carlowitz, and Martin Vossiek, University of Erlangen-Nuremberg, Germany

Multi-band LFMCW Radar Approaches for Improved Detection Capabilities
Roberto Gómez-García and José-María Muñoz-Ferreras, , University of Alcala, Madrid, Spain

Accurate Small Movement Detection using Radar Sensor for Emerging Mechanical and Biomedical Applications
Changzan Lu and Changzhi Li, Texas Tech University, Texax, USA

Silicon Phase Arrays RFICs with a Large Number of Elements for Millimeter-Wave Automotive Radar Systems
Gabriel M. Rebeiz, University of California, San Diego, La Jolla, CA USA

Fundamental Theory of Digital/Analog Array Radar Receivers using 3-D Multi-Beam Planar-Resonant Filter Banks
Arjuna Madanayak, University of Akron, Akron, OH, USA

Panel Session - Future Wireless Communications 19:00-20:30

Moderator: Dr. G. P. Li, University of California, Irvine

Panelists:

Dan Sievenpiper, UCSD
Julio Navarro, Boeing
Russell Hannigan, Intellectual Ventures

Room: Newport Coast Ballroom 1/2

Abstract:

In the past decade, the exponential growth of mobile devices, big data, social media, and cloud services have driven the creation of a hyper-connected environment. In this environment the internet and its associated services are accessible and immediate, people and businesses can communicate with each other instantly, and machines are closely interconnected with each other. As wireless communication continues to evolve, the relationships among individuals, consumers and enterprises, and citizens and the state will all be redefined. The future wireless communications ecosystem will introduce new opportunities to increase productivity and well-being by redefining the way business is done, generating new products and services, and improving the way public services are delivered. However, wireless communication will also bring about new challenges and risks in terms of security, cybercrime, privacy, the flow of personal data, individual rights, and access to information in clouds.
There is no doubt that the rapid changes and consequences of living and working in a hyper-connected world will directly impact the development, deployment and delivery of communication technologies over the next decade and beyond. But what will those global transformations be and what roles will industry, government, and, ultimately, the end-user play.

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

General Chair
Takao Inoue

I have the great honor and pleasure to invite you to the 2014 IEEE Radio Wireless Week (RWW). This will be the eighth RWW and we return to the southern California area for the second time since 2007.
RWW2014 will be held at the Newport Beach Marriott Hotel & Spa, Newport Beach, California, 19 – 22 January, 2014. The venue is located at the south end of greater Los Angeles area just minutes away from a beautiful harbor and southern California shoreline. With many wireless semiconductor companies, aerospace and defense industry, as well as world class universities in the area, Newport Beach will be a great location for all the attendees. RWW2014 consists of five related conferences that focus on the intersection between wireless communication theory, systems, circuits, and device technologies creating a unique forum for engineers to discuss various technologies for state-of-art wireless systems and their end-use applications. The conference targets to bridge the gap between digital, RF, hardware, and software that need to be seamlessly combined to keep wireless industry and mobile applications growing.

This year's theme is "Next Innovation in Wireless." RWW's multidisciplinary events bring together innovations that are happening across the broad wireless spectrum. It is our hope that RWW is a place where you will not only find discussions for present problems, but you will also be inspired by the diverse technical contents that might spark ideas for future research. The diversity of RWW is underlined by four diverse co-sponsor IEEE societies: Microwave Theory and Techniques Society (MTT-S), Antennas and Propagation Society (AP-S), Communications Society (ComSoc), and Engineering in Medicine and Biology Society (EMBS).

In addition to traditional podium presentations and poster sessions, there will be a track for IEEE Distinguished Lectures, Sunday half day workshops, panels, industry exhibits, WirelessApps industry presentations, and a demo session. A highlight on Tuesday will be the plenary talk on "THz Imaging for Biomedical Application" by Dr. Peter Siegel of Caltech/JPL. Also on Tuesday afternoon, in its third year, there will be a demo session where presenters can bring in a demonstration of their latest wireless experiments for a hands-on interactive forum. Demo session is particularly appropriate with the spirit of RWW because we get to see and feel how people are tackling real-world problems to address the next wireless innovation.
To support and encourage students pursuing a career in wireless area, each conference will have a student paper competition with awards that will be presented at the Tuesday banquet. On Monday afternoon, all student paper competition finalists will present their work in the poster session. I encourage you to check out what the next generation of wireless engineers are working on.

I would like to invite everyone to join us for 3 ½ days of great technical presentations, discussions, networking, and some fun in the beautiful Newport Beach, California, 19-22 January 2014.

RWW2014 General Chair
Takao Inoue

ADVANCE REGISTRATION

Advance registration for RWW 2014 is open now until January 5, 2014. Register now to take advantage of the early registration priceing!

Please visit http://www.radiowireless-week.org and follow the registration links.

MONDAY, 20 JANUARY 2014

RWW Session: MO1A
RWW Distinguished Lectures I
Room: Grand Pacific Ballroom A/B

SiRF Session: MO1B
Passives and MEMS
Room: Baycliff

PAWR Session: MO1C
Distortion Reduction Techniques in RF Power Amplifiers
Room: Grand Pacific Ballroom D

RWS Session: MO1D
High-speed and BroadBand Wireless Technologies
Room: Grand Pacific Ballroom C

08:00

MO1A-1 **Embrace Circuit Nonlinearity to Get Transmitter Linearity and Energy Efficiency**

E. Mc Cune, Besser Associates

MO1B-1 Recent Advances in Monolithic Integration of Diverse Technologies with Si CMOS (Invited)

T. Hussain, HRL, Malibu, United States

MO1C-1 2D Forward Twin Nonlinear Two-Box Model for Concurrent Dual-Band Digital Predistortion

C. Quindroit[1], N. Naraharisetti[1], P. Roblin[1], S. Gheitanchi[2], V. Mauer[2], M. Fitton[3], [1]Ohio State University, Columbus, United States, [2]Altera Europe, High Wycombe, United Kingdom, [3]Altera, San Jose, United States

08:20

MO1C-2 High Efficiency Two-Stage GaN Power Amplifier with Improved Linearity

A. Khan, H. Sarbishaei, S. Boumaiza, University of Waterloo, Waterloo, Canada

MO1D-1 Full Dimensional MIMO for Future Cellular Networks

S. Akoum, J. Acharya, Hitachi America, Brisbane, United States

08:40

MO1A-2 Radio-Frequency Nanoelectronics

L. Pierantoni, University of Ancona, Italy

MO1B-2 Non-linear Characteristics of Passive Elements on Trap-Rich High-Resistivity Si Substrates

K. Ben Ali[1], C. Roda-Neve[3], Y. Shim[2], M. Rais-Zadeh[2], J. Raskin[1], [1]Université Catholique de Louvain, Louvain-la-Neuve, Belgium, [2]University of Michigan, Ann Arbor, United States, [3]IMEC, Leuven, Belgium

MO1C-3 Investigation of the AM/PM Distortion in Doherty Power Amplifiers

L. Piazzon, R. Giofrè, P. Colantonio, F. Giannini, University of Roma Tor Vergata, Roma, Italy

MO1D-2 High Capacity Wireless Data Links in the W-Band Using Hybrid Photonics-Electronic Techniques for Signal Generation and Detection

J. Vegas Olmos, I. Tafur Monroy, Technical University of Denmark, Kgs. Lyngby, Denmark

09:00

MO1B-3 High Linearity 1-ohm RF Switches with Phase-Change Materials

J. Moon, H. Seo, D. Le, HRL Laboratories, Malibu, United States

MO1C-4 Front-end Modules with Versatile Dynamic EVM Correction for 802.11 Applications in the 2 GHz Band

A. Samelis, E. Whittaker, M. Ball, A. Bruce, J. Nisbet, L. Lam, W. Vaillancourt, Skyworks Solutions Inc., Bishop's Stortford, United Kingdom

MO1D-3 10 Gbps Outdoor Mobile Communication Experiment Employing CoMP in 11 GHz Band

M. Takahashi, S. Suyama, H. Suzuki, K. Fukawa, Tokyo Institute of Technology, Meguro-ku, Japan

09:20

MO1B-4 Fabrication of Low Loss 67 GHz Coplanar Waveguides on Gold-Doped High Resistivity Silicon

N. Z. Hashim, A. Abuelgasim, C. H. de Groot, University of Southampton, Southampton, United Kingdom

MO1C-5 Integrated Linearizer/Block Upconverter

A. Katz[2,1], R. Gray[1], R. Dorval[1], [1]Linearizer Technology, Inc., Hamilton, United States, [2]The College of New Jersey, Ewing, United States

MO1D-4 Multi-Gigabit Data Transmission Using MMIC-based E-Band Frontends

J. Antes[1], F. Boes[1], D. Meier[1], U. Lewark[2], A. Tessmann[3], A. Leuther[3], R. Henneberger[4], I. Kallfass[1], [1]University of Stuttgart, Stuttgart, Germany, [2]Karlsruhe Institute of Technology, Karlsruhe, Germany, [3]Fraunhofer Institute for Applied Solid State Physics, Freiburg, Germany, [4]Radiometer Physics GmbH, Meckenheim, Germany

MONDAY, 20 JANUARY 2014

RWW Session: MO2A

RWW Distinguished Lecturers II

Room: Grand Pacific Ballroom A/B

SiRF Session: MO2B

Circuits

Room: Baycliff

PAWR Session: MO2C

High Efficiency RF Power Amplifiers

Room: Grand Pacific Ballroom D

RWS Session: MO2D

Emerging Wireless Technologies and Applications

Room: Grand Pacific Ballroom C

10:10

MO2A-1 Remote Sensing of the Physical Qualities of Fruits

M. Krairiksh, King Mongkut's Institure of Technology Ladkrabang, Bangkok, Thailand

MO2B-1 Stacked Si MOSFET Strategies for Microwave and Mm-wave Power Amplifiers

P. Asbeck, UCSD, La Jolla, United States

MO2C-1 Challenges in Designing 5 GHz 802.11ac WiFi Power Amplifiers (Invited talk)

Y. Wang, R. Naylor, RF Micro Devices, Billerica, United States

10:30

MO2C-2 A Novel Continuous Class-F Mode Power Amplifier

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

MO2D-1 R8 Subcommittee Invited Paper

TBA

10:50

RWW STUDENT PAPER CONTEST

RWW 2014 Student Paper Chairs will select finalists among the student paper submissions, from each conference (RWS, PAWR, BioWireleSS, and WiSNet, SiRF). During the poster presentation, held January 20, Monday afternoon 14:20 -16:10, 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 held Tuesday night from 18:00-21:00. Please visit the student paper competition and support outstanding work by future researchers in industry and academia.

MO2B-2 A Process-Technology-Scaling-Tolerant Pipelined ADC Architecture Achieving 6-bit and 4 GS/s ADC in 45 nm CMOS

M. W. Chen[1], L. R. Carley[1], D. S. Ricketts[2], [1]Carnegie Mellon University, Pittsburgh, United States, [2]North Carolina State University, Raleigh, United States

MO2C-3 Novel Design of a 10 dB Back-Off Broadband Sequential Doherty Power Amplifier for Wireless Applications

X. Nghiem, R. Negra, RWTH Aachen University, Aachen, Germany

MO2D-2 Design of Touch-Sensitive Surface with Arbitrary Shape Based on Time-Domain Reflectometry Using Injket-Printing

M. Q. Duong, Y. Kawahara, T. Asami, The University of Tokyo, Bunkyo-ku, Japan

11:10

MO2B-3 A 65 nm CMOS 0.1 GHz to 2.1GHz Linear-in-dB VGA with Active-Inductor Bandwidth Extension for the Square Kilometer Array

G. Wu, L. Belostotski, J. W. Haslett, University of Calgary, Calgary, Canada

MO2C-4 A 10-W Modified LINC Power Amplifier with a Reduced-Size Chireix Power Combiner

O. Talebi Amiri, A. Koukab, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

MO2D-3 High Dynamic-Range and Sensitivity Six-Port Receiver Using Reactive Matching Technique

S. Qayyum, M. Wei, R. Negra, RWTH Aachen University, Aachen, Germany

11:30

MO2B-4 A Switchable-Core SiGe HBT Low-Noise Amplifier for Millimeter-Wave Radiometer Applications

C. A. Ulusoy, R. L. Schmid, C. Coen, J. D. Cressler, Georgia Institute of Technology, Atlanta, United States

MO2C-5 GaN High-Efficiency S-band Power Amplifier with Power Flexibility from 1 to 10 Watts

S. Dellier[1], T. Dehaene[2], E. Peragin[3], [1]AMCAD Engineering, Limoges, France, [2]Syrlinks, Bruz, France, [3]Centre National d'Etudes Spatiales (CNES), Toulouse, France

MO2D-4 Optimal Bits per Joule Power Allocation for Multiuser Cognitive Radio Networks

M. Naeem, K. Illanko , A. Karmokar, A. Anpalagan, M. Jaseemuddin, Ryerson University, Toronto, Canada

MONDAY, 20 JANUARY 2014

RWS Session: MO3A

Passives Antennas I

Room: Grand Pacific Ballroom A/B

RWS-SiRF Joint Session: MO3B

Transceivers and Front-end Technologies SOC and SiP

Room: Baycliff

PAWR Session: MO3C

RF Power Amplifier Technology

Room: Grand Pacific Ballroom D

RWS Session: MO3D

MIMO Signal Processing and Smart Antennas

Room: Grand Pacific Ballroom C

13:30

MO3A-1 R1 Design and Measurements of Substrate Integrated Planar mm-Wave Antenna Array at 60 to 325 GHz

Z. N. Chen, National University of Singapore, Singapore

MO3B-1Extreme Silicon RFICs for Phased-Array Applications

G. M. Rebeiz, University of California, San Diego, La Jolla, United States

MO3C-1 Advanced Design of Differential CMOS PA (Invited talk)

B. Kim[1,2], S. Jin[1], B. Park[2], Y. Cho[1], C. Zhao[1], K. Moon[1], [1]Pohang University of Science and Technology (EE), Pohang, Republic of Korea, [2]Pohang University of Science and Technology (ITCE), Pohang, Republic of Korea

MO3D-1 Prototyping and Performance Evaluation of TDD-Based 2x2 MIMO-OFDM Transceiver

K. Mitsuyama, N. Kogo, F. Uzawa, N. Iai, Japan Broadcasting Corporation (NHK), Tokyo, Japan

13:50

MO3D-2 Nonlinear Distortion Suppression Scheme Employing Transmit Power Control for MU-MIMO-OFDM Systems

G. Osada, S. Takebuchi, F. Maehara, Waseda University, Shinjuku-ku, Japan

14:10

MO3A-2 Investigating the Effect of Grounding GPS Antennas on their Radiation Properties on Vehicular Platforms

D. N. Aloi[1], E. Ghafari[1], A. Steffes[1], M. S. Sharawi[2], [1]Oakland University, Rochester, United States, [2]King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia

MO3B-2 A 1.2 V, 2.7 mA Receiver Front-end for Bluetooth Low Energy Applications

L. Liao, A. Atac, Y. Zhang, Y. Wang, Z. Chen, M. Schleyer, R. Wunderlich, S. Heinen, RWTH Aachen University, Aachen, Germany

MO3C-2 A Q-band Power Amplifier with High-gain Pre-driver and 18.7 dBm Output Power for Fully Integrated CMOS Transmitters

W. Tai[1], D. S. Ricketts[2], [1]Carnegie Mellon University, Pittsburgh, United States, [2]North Carolina State University, Raleigh, United States

MO3D-3 Indoor Experiment of 8-by-2 Multiuser MIMO Transmission using Tomlinson-Harashima-Precoding Subject to Limited CSI Feedback

Y. Hatakawa, T. Matsumoto, K. Kitagawa, S. Konishi, KDDI R&D Laboratories Inc., Fujimino, Japan

14:30

MO3A-3 A 60 GHz Passive Repeater with Endfire Radiation Using Dielectric Resonator Antennas

D. Wang, R. Gillard, R. Loison, Institute of Electronics and Telecommunications of Rennes, Rennes, France

MO3B-3 0.35 dB Loss 20 dB Coupling Directional Coupler Integrated in 130 nm CMOS SOI Technology Targeting 3G PA SOC

F. Gianesello, C. Durand, D. Gloria, STMicroelectronics, Crolles, France

MO3C-3 Watt-Level Non-Uniform Distributed 6–37 GHz Power Amplifier MMIC with Dual-Gate Driver Stage in GaN Technology

P. Dennler, R. Quay, P. Brückner, M. Schlechtweg, O. Ambacher, Fraunhofer Institute for Applied Solid-State Physics, Freiburg, German

MO3D-4 Joint Direction-of-Departure and Direction-of-Arrival Estimation in an Ultra-Wideband MIMO Radar System

I. Pasya[1], T. Kobayashi[1], N. Iwakiri[2], [1]Tokyo Denki University, Tokyo, Japan, [2]University of Tokyo, Tokyo, Japan

14:50

MO3A-4 Hetero-Plane Beam Synthesis Using 60 GHz Band 3-D Phased Array Antenna Module

Y. Suzuki, S. Yoshida, S. Kameda, N. Suematsu, A. Taira, T. Takagi, K. Tsubouchi, Tohoku University, Sendai, Japan

MO3B-4 Universal Wideband Reconfigurable Transceiver with Extended Frequency Range up to 6 GHz

E. González-Rodríguez, H. Maune, Y. Zheng, R. Jakoby, Technische Universität Darmstadt, Darmstadt, Germany

MO3C-4 Gain/Phase Compensation for Outphasing Transmitters Targeting LTE Applications

T. M. Hone, A. F. Aref, J. Guan, R. Negra, Mixed-Signal CMOS Circuits, Aachen, Germany

MO3D-5 Development of Multiuser MIMO Testbed Adopting Tomlinson-Harashima Precoding and Limited CSI Feedback

T. Matsumoto, Y. Hatakawa, K. Kitagawa, S. Konishi, KDDI R&D Laboratories, Inc., Fujimino, Japan

Interactive Poster Session: SiRF 14:20-16:10

MO3P High Efficiency RF Power Amplifiers

Room: Newport Coast Ballroom

MO3P-1 An Output Match Network Design Method for High Efficiency and Broadband Class-J PA
L. Ma, F. You, X. Hou, Y. Li, University of Electronic Science & Technology of China, Chengdu, China

MO3P-2 Highly Linear 1.6 GHz 3.3 V RF Power Amplifier Using Floating Body Technique In Triple-well 130 nm CMOS Technology
M. A. Khan, R. Negra, RWTH Aachen University, Aachen, Germany

MO3P-3 A Broadband Parallel Doherty Amplifier with Large Power Back-off
X. Hou, S. He, L. Ma, F. You, University of Electronic Science and Technology of China, Chengdu, China

MO3P-4 Design of 60 GHz 90 nm CMOS Balanced Power Amplifier With Miniaturized Quadrature Hybrids
C. Lin, C. Yu, H. Kuo, H. Chuang, National Cheng Kung University, Tainan, Taiwan

MO3P-5 SOI MESFET RF Power Amplifiers at the 45 nm Node
S. J. Wilk[1,2], W. Lepkowski[1,2], T. J. Thornton[1,2], [1]Arizona State University, Tempe, United States, [2]SJT Micropower Inc., Fountain Hills, United States

MO3P-6 Design of Broadband GaN Doherty Power Amplifiers
J. Shao, R. Zhou, H. Ren, B. Arigong, M. Zhou, H. Kim, H. Zhang, University of North Texas, Denton, United States

MO3P-7 Analysis of High Power LDMOS Amplifiers for Industrial Applications under Mismatch Conditions
A. Alt, A. Grede, A. Labanc, C. Thome, D. Gruner, TRUMPF Huettinger GmbH + Co. KG, Freiburg, Germany

MO3P-8 Characterization of GaN HEMTs for Integrated Supply Modulators
A. T. Pereira[1], A. E. Parker[1], M. Heimlich[1], N. Weste[1], L. Dunleavy[2], [1]Macquarie University, Sydney, Australia, [2]Modelithics, Inc, Tampa, United States

MO3P-9 Behavioral Modeling of Class J Amplifier Driven by 100 MHz LTE-Advanced Signal Using Dynamic Nonlinearity Reduction
O. Hammi[1], S. Bensmida[2], K. Morris[2], [1]King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, [2]University of Bristol, Bristol, United Kingdom

MO3P-10 Signal Generation Algorithm for Digital Polar Transmitters with Reduced Receive Band Noise
T. Nakatani[1], H. Gheidi[1], V. W. Leung[2], D. F. Kimball[3,1], P. M. Asbeck[1], [1]University of California San Diego, La Jolla, United States, [2]Qualcomm Technology Inc., San Diego, United States, 3MaXentric Technologies, LLC, La Jolla, United States

MO3P-11 Creating a High Efficiency, Miniaturized Power Amplifier Module for the Emerging Pico-cell Base Station Market
R. A. Branson, G. Burgin, J. Dekosky, J. Gengler, J. Delaney, R. Hajji, A. Roberts, T. Landon, Triquint, Richardson, United States

MO3P-12 Parameterized Basis Functions for Numerically Stable Behavioral Modeling of RF Power Amplifiers
A. Harguem[1,3], N. Boulejfen[2,3], F. Ghannouchi[3], A. Gharsallah[1], [1]Faculté des Sciences de Tunis, Tunis, Tunisia, [2]Institut Supérieure des Sciences Appliquées et de Technologie, de Kairouan, Kairouan, Tunisia, [3]iRadio Laboratory, Schulich School of Engineering, University of Calgary, Calgary, Canada

Marriott Newport Beach Hotel – Official RWW Meeting Venue

The RWW2014 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 Monday, 24 December 2013 at 5:00pm Central 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 2014" to receive the negotiated room rate. Reservation requests received by the hotel after 24 December 2013 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, internet access in their guest room and health club access free of charge.

Panel Session - Commercialization of RF technologies for Medical Applications

Monday 12:00- 13:00

Moderator: Dr. J. C. Chiao, University of Texas at Arlington

Panelists:

Jessi Johnson, Mira Dry
Arthur Astrin, Astrin Radio
Perry Li, St, Jude Medical

Room: Grand Pacific Ballroom C

Abstract:

With advances in high frequency electronics and research on the interaction between electromagnetic waves and tissues, radio frequency technologies bring novel and grounding-breaking features and advantages to medical applications. The inspiring presentations and sparkling discussions in the past Bio-Wireless sessions have indicated numerous technical challenges to overcome and enormous opportunity in the near future for healthcare applications. The next steps of moving towards commercialization face issues not only in engineering but also in clinical needs and standards. In this panel, expert panelists will discuss the vision, opportunities, pathways, challenges, industrial synergy and standards in commercialization of advanced RF technologies to the medical fields.

Panel Session - Emerging PA Breakthrough for Efficiency and Linearity Enhancement

Monday 19:00-20:30

Organizer: Fred Schindler, RFMD; Robert Caverly, Villanova University

Panelists:

Steve Cripps, Cardiff University;
Marc Franco, RFMD;
Andrei Grebennikov, RF axis;
Jose Carlos Pedro,Aveiro University; Zoya Popovic, University of Colorado, Boulder

Room: Grand Pacific Ballroom C

Abstract:

Efficiency and linearity are typically among the most critical performance characteristics for power amplifiers, and it is essential to trade-off between them when designing a power-amplifier. In this panel session, emerging breakthroughs for efficiency and linearity enhancement will be discussed, covering theoretical aspects as well as technology, novel circuit topologies and architectures for distortion reduction. There will be no formal presentations. The aim is to provide answers to questions posed by session attendees. The panel of is made up of knowledgeable experts that will seed the discussion. Attendees are encouraged to participate in the conversation and express their views. Please bring your questions. All power amplifier types, frequencies and techniques are open for discussion.

MONDAY, 20 JANUARY 2014

RWW

WisNet Session: MO4A

Passive Antennas II

Room: Grand Pacific Ballroom A/B

SiRF Session: MO4B

Applications and Wireless Architectures

Room: Baycliff

PAWR Session: MO4C

RF Power Amplifier Modeling and System Analysis

Room: Grand Pacific Ballroom D

RWS Session: MO4D

Transceivers and Front-end Technologies SOC and SiP

Room: Grand Pacific Ballroom C

15:40

MO4A-1 Realizing Non-Foster Reactances Using Negative-Group-Delay Networks and Applications to Antennas

G. Eleftheriades, H. Mirzaei, University of Toronto, Toronto, Canada

MO4B-1 Wideband Envelope Tracking Power Amplifiers for Wireless Communications

L. Larson, D. Kimball, P. Asbeck, Brown University, Providence, United States

MO4C-1 A Single-Ended Power Amplifier Behavioral Model for AM/AM and AM/PM Predictions (Invited talk)

J. C. Pedro, L. C. Nunes, Universidade de Aveiro, Aveiro, Portugal

MO4D-1 Antenna Integration for SiP Systems

W. De Raedt, IMEC, Heverlee, Belgium

16:20

MO4A-2 Design of Rectenna Array Panel Taking into Account Mutual Coupling for RF Energy Harvesting

H. Kamoda, M. Hanazawa, S. Kitazawa, H. Ban, N. Kukutsu, K. Kobayashi, ATR Wave Engineering Laboratories, Seika-cho, Soraku-gun, Japan

MO4B-2 An Inductor-less LTE Receiver Using an 8-Path Filter for TX Leakage Suppression

A. Elmaghraby, G. Fischer, R. Weigel, T. Ussmueller, University of Erlangen-Nuremberg, Erlangen, Germany

MO4C-2 A Semi-Physical Power Amplifier Behavioral Model Capable of Predicting Gain Expansion Effects

S. Glock[1], J. Rascher[1], B. Sogl[2], T. Ussmueller[1], J. Mueller[2], G. Fischer[1], R. Weigel[1], [1]Friedrich-Alexander-University of Erlangen-Nuremberg, Erlangen, Germany, [2]Intel Mobile Communications, Neubiberg, Germany

MO4D-2 A 21.1 mW 6.2 dB NF 77~81 GHz CMOS Low-Noise Amplifier with 13.5±0.5 dB S21 and Excellent Input and Output Matching for Automotive Radars

Y. Lin, G. Lee, C. Wang, C. Chen, National Chi Nan University, Puli, Taiwan

16:40

MO4A-3 Variable Beamwidth Shorted Patch Antenna Array for Indoor Positioning

H. Matsumoto, M. Tanikawara, T. Kohiyama, Hitachi Industrial Equipment Systems Co., Ltd., Chiyoda-ku, Japan

MO4B-3 A Novel THz Enhanced Dipole Antenna Using Second Order High Impedance Surfaces Resonance for MM Imaging and Sensing

G. S. Mikhail[1], Y. Quéré[2], C. Quendo[2], C. Person[1], [1]Télécom Bretagne, Brest, France, [2]Université de Bretagne Occidentale, Brest, France

MO4C-3 Digital Predistortion Based on Feedback Iteration for Concurrent Dual-Band Power Amplifier

Y. Li, K. Chen, Z. Hu, X. Wang, L. Ma, University of Electronic Science & Technology of China, Chengdu, China

MO4D-3 A 3D-Integrated, Low-Height, Small Module Design Techniques for 4.48 GHz, 560 MHz-Bandwidth TransferJet(TM) Transceiver

K. Agawa, I. Seto, A. Happoya, Y. Iida, Y. Imaizumi, M. Okano, D. Suzuki, Y. Sato, M. Iwanaga, K. Sato, S. Arai, N. Uchida, K. Ryugo, D. Miyashita, R. Fujimoto, Y. Unekawa, Toshiba Corporation, Kawasaki, Japan

17:00

MO4A-4 A High Efficiency, Electrically-Small, 3-D Machined-Substrate Antenna Fabricated with Fused Deposition Modeling and 3-D Printing

I. T. Nassar[1], H. Tsang[2,3], K. Church[3,2], T. Weller[1], [1]University of South Florida, Tampa, United States, [2]University of Texas El paso, El Paso, United States, [3]Sciperio, Orlando, United States

MO4C-4 A Simple Characterization of Power Spectral Density for Nonlinearly Amplified OFDM Signals

T. Lee, H. Ochiai, Yokohama National University, Yokohama, Japan

MO4D-4 Compact 120-140 GHz Radar Tx/Rx Sensors with On-Chip Antenna

S. Yuan, A. Strodl, V. Valenta, A. Trasser, H. Schumacher, Ulm University, Ulm, Germany

TUESDAY, 21 JANUARY 2014

TU2 Plenary Session

Dr. Peter H. Siegel

Caltech/JPL

Time: 10:10-11:50

Room: Grand Pacific Ballroom C, D, E and F

Title:

THz Imaging: What You See and What you Don't

Abstract:

THz technology has developed to the point at which we can now begin to use customized-off-the-shelf components to construct near-real time imagers. However traditional imaging at these wavelengths is extremely challenging. Most materials, and the atmosphere itself, have extremely high loss, limiting transmission measurements. Contrast from scattered energy is generally low, as the frequency and amplitude sensitivity to reflected power from most environmental objects is poor. Thermal contrast is limited by high background temperatures (generally above the energy range of THz signals). However, as advances in solid-state source and receiver technology push ever upwards in frequency, more and more proposals are aimed at using this new found capability for active and passive imaging. It turns out that there are at least a few tricks that one can play to help integrate millimeter and submillimeter wavelength transceivers into traditional imaging applications. One of the first application areas to take advantage is undergarment threat detection. This talk will discuss current techniques in active THz scanning, both to introduce the phenomenology of what we see reflected off the body, as well as the hidden phenomenology of what THz radiation may be stimulating in the body.

Plenary Speaker:

Dr. Peter Siegel, Caltech/JPL

Peter H. Siegel (BA Colgate 1976, PhD Columbia, 1983, IEEE member since 1975) has held appointments as Faculty Associate in Electrical Engineering and Senior Scientist in Biology at Caltech and Senior Research Scientist at the NASA Jet Propulsion Laboratory. At JPL, he founded and led for 20 years, the Submillimeter Wave Advanced Technology (SWAT) team, a group of 20+ scientists and engineers developing THz technology for NASA's near and long term space missions. This included delivering key components for four major satellite missions and leading more than 75 smaller R&D programs for NASA and the US department of defence. At Caltech, Dr. Siegel has been involved in new biological and medical applications of THz, especially low power effects on neurons and most recently, millimetre-wave monitoring of blood chemistry. Among many other functions, he serves as founding Editor-in-Chief of the IEEE Transactions on Terahertz Science and Technology and the General Secretary of the International Society of Infrared, Millimeter, and Terahertz Waves, the world's largest society devoted exclusively to THz science and technology, which he founded in 2009. He is also an IEEE Fellow, and has served as an IEEE Distinguished lecturer, vice-chair and chair of IEEE MTTS Committee 4 – THz Technology, and an ad-hoc member of the MTTS AdCom. Dr. Siegel has published more than 300 articles on THz components and technology and has given more than 100 invited talks on this subject throughout his career of 37 years in THz.

RWS Session: TU1B

Transceivers and Front-end Technologies SOC and SiP

Room: Grand Pacific Ballroom A/B

SiRF Session: TU1C

Circuits

Room: Baycliff

BioWireleSS Session: TU1D

Wireless Technologies for Biosignals and Modeling in Medical

Room: Cardiff

08:00

TU1B-1 Design of Low Phase-Noise Voltage-Controlled Oscillator Using Tunable Evanescent-Mode Cavity

Y. Liu, A. Anand, X. Liu, University of California Davis, Davis, United States

TU1C-1 Latest Development of Near-field Communication (NFC) on Handsets Application

M. Wiklund, M. Mofidi, R. Gaethke, A. Wong, M. Kohlmann, Qualcomm, San Jose, United States

TU1D-1 Monitoring Respiratory Rate and Pattern in Adult and Infant via Contactless Detection of Thorax and Abdomen Movements through SoC UWB Pulse Radar Sensor

D. Zito[1,2], D. Pepe[1], [1]Tyndall National Institute, Cork, Ireland, [2]University College Cork, Cork, Ireland

08:20

TU1B-2 MMIC-Based Module-Level Frequency Generation for E-Band Communication Systems

U. J. Lewark[1], J. Antes[2], M. Kuri[3], R. Henneberger[4], A. Tessmann[3], S. Wagner[3], A. Leuther[3], T. Zwick[1], I. Kallfass[2], [1]Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, [2]University of Stuttgart, Stuttgart, Germany, [3]Fraunhofer Institute of Applied Solid State Physics (IAF), Freiburg, Germany, [4]Radiometer Physics GmbH (RPG), Meckenheim, Germany

08:20

TU1D-2 PXI-based Non-Contact Vital Sign Detection System

S. Banerjee, C. Gu, C. Li, Texas Tech University, Lubbock, United States

08:40

TU1B-3 4X4 Multi-Port Amplifier Using Reconfigurable Butler Matrix

H. Lee[1], D. Park[2], H. Dong[2], M. Lee[2], J. Yu[1], [1]KAIST, Daejeon, Republic of Korea, [2]University of Seoul, Seoul, Republic of Korea

TU1C-2 9.9 mA 5-6 GHz CMOS Sub-Harmonic Direct-Conversion Receiver Using Deep N-Well BJT

W. Chang[1], C. Meng[1], J. Syu[1], C. Wang[1], G. Huang[2], [1]National Chiao Tung University, Hsinchu, Taiwan, [2]National Nano Device Laboratories, Hsinchu, Taiwan

TU1D-3 Movement-Immune Respiration Monitoring Using Automatic DC-Correction Algorithm for CW Doppler Radar System

Y. Li[1], G. Wang[1], C. Gu[2], C. Li[1], [1]Texas Tech University, Lubbock, United States, [2]MaxLinear Inc, Irvine, United States

09:00

TU1B-4 A DC to 2 GHz Downconverter with Image Rejection and High Blocker Tolerance for Cognitive Radios

A. Fahim, Semtech Corporation, Irvine, United States

TU1C-3 A Low-Power, Low-Noise, Highly-Linear Receiver for 122 GHz Applications in a SiGe BiCMOS Technology

A. Chakraborty[1,3], S. Trotta[1], K. Aufinger[2], R. Lachner[2], R. Weigel[3], [1]Infineon Technologies AG, Neubiberg, Germany, [2]Infineon Technologies AG, Neubiberg, Germany, [3]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

TU1D-4 High-Amplitude Motion Cancellation Method for Handheld UWB Doppler Radar

L. Ren[1], Y. Koo[1], Y. Wang[3], G. To[2], M. Mahfouz[2], A. E. Fathy[1], [1]University of Tennessee-EECS, Knoxville, United States, [2]University of Tennessee-MABE, Knoxville, United States, [3]RF Micro Devices, Billerica, United States

09:20

TU1C-4 A 90 nm CMOS Multi-standard GNSS Receiver Front-end

C. Cheng, Y. E. Chen, National Taiwan University, Taipei, Taiwan

TUESDAY, 21 JANUARY 2014

RWW

RWS Session: TU3A	RWS Session: TU3B	SiRF Session: TU3C	BioWireleSS Session: TU3D
Passives Antennas III	**Propagation Channel Modeling and Utilization**	**Applications and Wireless Architectures**	**PAN BAN Energy Scavenging and Remote Patient Monitoring**
Room: Grand Pacific Ballroom C/D	Room: Grand Pacific Ballroom A/B	Room: Baycliff	Room: Cardiff
13:30			
TU3A-1 A CPW Fed Rectangular Slot Antenna for Wideband Circular Polarization *R. V. Ram Krishna[1], R. Kumar[2], [1]DIAT(Deemed University), Pune, India, [2]ARDE, Pune, India*	**TU3B-1 Performance Analysis of Cognitive Radio Networks over Kappa-mu Fading Channel with Noise Uncertainty** *F. von Glehn, U. S. Dias, University of Brasilia, Brasilia, Brazil*	**TU3C-1 A 80-95 GHz Direct Quadrature Modulator in SiGe Technology** *M. Abbasi[1], S. Carpenter[1], H. Zirath[1], F. Dielacher[2], [1]Chalmers University of Technology, Goteborg, Sweden, [2]Infineon Technologies, Villach, Austria*	**TU3D-1 Electrophysiologic Monitoring and Minimally Invasive Neurosurgery: Opportunities for Medical Engineering** *C. Chen, University of California San Diego, San Diego, United States*
13:50			
TU3A-2 Design of CPW Feed Printed Monopole Antenna for Dual Polarization *R. V. Ram Krishna[1], R. Kumar[2], [1]DIAT(Deemed University), Pune, India, [2]ARDE, Pune, India*	**TU3B-2 Modeling the Influence of Wall Roughness on Tunnel Propagation** *C. Zhou, J. Waynert, National Institute for Occupational Safety and Health, Pittsburgh, United States*	**TU3C-2 Integrated 60 GHz CMOS Variable-Gain Low-Noise Amplifier and Full 360° Phase Shifter for Phased-Array RF Receiving System** *C. Yu, P. Lo, J. Lyu, H. Kuo, H. Chuang, National Cheng Kung University, Institute of Computer and Communication Engineering, Tainan, Taiwan*	**TU3D-2 SAR Evaluation of Ultra Wideband (UWB) Textile Antennas** *P. Soh[1,3], G. Vandenbosch[1], F. Wee[3], M. Mercuri[1], A. van den Bosch[2], M. Martinez-Vazquez[2], D. Schreurs[1], [1]KU Leuven, Leuven, Belgium, [2]IMST GmbH, Kamp-Lintfort, Germany, [3]Universiti Malaysia Perlis, Arau, Malaysia*
14:10			
TU3A-3 Miniaturized Tunable Conical Helix Antenna *S. Zhu[1,2], T. Ghazaany[1,2], R. Abd-Alhameed[1], S. Jones[1], J. Noras[1], T. Suggett[2], S. Marker[2], [1]University of Bradford, Bradford, United Kingdom, [2]Seven Technologies Group-Datong, Leeds, United Kingdom*	**TU3B-3 Path Loss Evaluation for Mobile-to-Mobile Wireless Channell** *S. Zhu[1,2], T. Ghazaany[1,2], S. Jones[1], R. Abd-Alhameed[1], J. Noras[1], A. Merrell[2], J. Wilson[2], [1]University of Bradford, Bradford, United Kingdom, [2]Seven Technologies Group-Datong, Leeds, United Kingdom*	**TU3C-3 An X-band 6-Bit Active Phase Shifter** *K. Kibaroglu, E. Ozeren, I. Kalyoncu, C. Caliskan, Y. Gurbuz, Sabanci University, Istanbul, Turkey*	**TU3D-3 Evaluation of a Plaster Substrate for the Design of an Ultra WideBand Textile Antenna for Biomonitoring Applications** *D. L. Paul, J. P. McGeehan, Y. Xu, University of Bristol, Bristol, United Kingdom*
14:30			
TU3A-4 Slotted Microstrip Patch Antenna with Embedded Feed *S. S. Menon, P. Deo, D. Mirshekar-Syahkal, University of Essex, Colchester, United Kingdom*	**TU3B-4 Wideband MIMO Channel Sounding Setup for 2.4 GHz ISM Band** *F. Talebi, T. G. Pratt, University of Notre Dame, Notre Dame, United States*	**TU3C-4 An Inductorless RC-based Quadrature Phase Generator and Its Application to Vector-Sum Phase Shifter** *T. Yan, W. Lin, C. Kuo, National Chiao-Tung University, Hsinchu, Taiwan*	**TU3D-3 A Mobile and Wireless Approach for Cardiac Output Monitoring** *D. Teichmann, T. Bartelt, S. Leonhardt, M. Walter, RWTH Aachen University, Aachen, Germany*

Panel Session - THz Wireless Communication — Tuesday 12:00-13:00

Moderator: Dr. Frank Chang, UCLA

Panelists:

Ken Cooper, JPL
Peter Siegel, JPL
Richard Lai, Northrop Grumman
Q. Jane Gu, UC Davis

Room: Grand Pacific Ballroom A/B

Abstract:

The Terahertz (THz) band is a frontier area for research in science and technology. This band from 300 GHz to 3000 GHz lies above the frequency range of traditional electronics, but below the range of optical and infrared regions. Many research and defense institutions have already demonstrated THz sensing and imaging techniques, but with the recent advancement in CMOS and solid-state devices researchers around the world are now discussing the future of THz communication systems for commercial applications. Standards bodies that address THz communications have also started to form.
However, the challenges for THz communication are huge. In addition to the need for a THz source, an appropriate receiver system, and OTA testing, a solid understanding of electromagnetic propagation and absorption/diffraction characteristics of materials and the environment is absolutely essential. The necessary investment of time and money, the development of expensive hardware, and the creation of testing methodologies can all create bottlenecks in implementation of THz technology for commercial applications.
In an effort to discuss the challenges and prospects for THz technology, we have assembled a panel of distinguished researchers.

TUESDAY, 21 JANUARY 2014

RWS Session: TU5A	RWS Session: TU5B	RWS Session: TU5C	BioWireleSS Session: TU5D
MIMO Signal Processing and Smart Antennas	**Late News**	**Late News**	**Wireless Position and Location in Medicine**
Room: Grand Pacific Ballroom C/D	Room: Grand Pacific Ballroom A/B	Room: Baycliff	Room: Cardiff
16:00			
TU5A-1 Nonlinear/Electromagnetic Approach for Time-Modulated Array Simulation *D. Masotti[1], P. Francia[1], A. Costanzo[2], V. Rizzoli[1], [1]University of Bologna, Bologna, Italy, [2]University of Bologna, Cesena, Italy*	**TU5B-1** **TBA**	**TU5C-1** **TBA**	**TU5D-1 Asynchronous Subthreshold CMOS Event Detector for Wireless BAN Sensor Nodes** *F. Grimminger[1], G. Kowalczyk[2], H. Unterassinger[3], A. Schwarzmeier[1], G. Fischer[1], R. Weigel[1], D. Kissinger[1], [1]University of Erlangen-Nuremberg, Erlangen, Germany, [2]Infineon Technologies Austria AG, Graz, Austria, [3]Graz University of Technology, Graz, Austria*
16:20			
TU5A-2 Semi-Blind Interference Alignment over Correlated Wireless Channels *M. Takai[1], K. Ishibashi[2], T. Wada[1], [1]Shizuoka University, Hamamatsu, Japan, [2]The University of Electro-Communications, Chofu, Japan*	**TU5B-2** **TBA**	**TU5C-2** **TBA**	**TU5D-2 Design and Implementation of Wearable RFID Tag for Real-Time Ubiquitous Medical Care** *Y. Chen[1], H. Sun[1], R. Chen[2], [1]National Tsing Hua University, Hsinchu, Taiwan, [2]China University of Technology, Hsinchu, Taiwan*
16:40			
TU5A-3 A Rapid Direction of Arrival Estimation Procedure for Adaptive Array Antennas Covered by a Shaped Dielectric Lens *R. Sankaranarayanan, D. S. Badri, R V College of Engineering, Bangalore, India*	**TU5B-3** **TBA**	**TU5C-3** **TBA**	**TU5D-3 A Low-Power Fall Detection and Activity Monitoring System for Nursing Facilities and Hospitals** *A. Schwarzmeier, R. Weigel, G. Fischer, D. Kissinger, University of Erlangen-Nuremberg, Erlangen, Germany*
17:00			
TU5A-4 Effect of PAPR Reduction to BS Cooperation MIMO Systems under Multi-Cell Environment *R. Myoenzono, O. Takyu, F. Sasamori, S. Handa, Shinshu University, Nagano, Japan*	**TU5B-4** **TBA**	**TU5C-4** **TBA**	**TU5D-4 A Dual-Frequency IR-UWB Radar System for Detection of Trapped Survivors in Post-Disaster Scenarios** *Z. Li, H. Lv, Y. Zhang, G. Lu, S. Li, X. Jing, J. Wang, Fourth Military Medical University, Xi'an, China*

JOINT RWW BANQUET

Tuesday Evening, 21 January 2014 from 18:00-21:00
Room:

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.

Exhibits/Wireless Apps/Demo

Industry Exhibits: Monday 20 January 1:30pm - 5:30pm and Tuesday 21 January 9am - 5:30pm

WirelessApps Talks: Tuesday 21 January 1:30pm - 5:30pm

Demo Session: Tuesday 21 January 1:30pm - 5:30pm

Wednesday, 22 JANUARY 2014

WiSNet Session: WE1A

Six-Port and Multi-Port Technology

Room: Grand Pacific Ballroom C/D

RWW Session: WE1B

Passive Components and Packaging I

Room: Grand Pacific Ballroom A/B

SiRF Session: WE1C

Circuits

Room: Baycliff

BioWireleSS Session: WE1D

Micro-Sensors and In-vivo Microsystems

Room: Cardiff

08:00

WE1A-1 Six-Port Technology for Millimeter-wave Radar and Imaging Applications

K. Haddadi, T. Lasri, Institute of Electronics, Microelectronics and Nanotechnology (IEMN), Villeneuve d'Ascq, France

WE1B-1 R10 Subcommittee Invited Paper

TBA

WE1C-1 RF Performance Limits of Ballistic Si Field-Effect Transistors

A. Pan, C. Chui, University of California, Los Angeles, Los Angeles, United States

WE1D-1 A Power Consumption Optimized Reflective In-ear Pulse Oximeter for Mobile Health Monitoring

B. Venema, M. S. Wolke, V. Blazek, S. Leonhardt, RWTH Aachen University, Aachen, Germany

08:20

WE1A-2 A Tank Level Sensor Based on Six-Port Technique Comprising a quasi-TEM Waveguide

S. Mann, S. Lindner, F. Barbon, S. Linz, A. Talai, R. Weigel, A. Koelpin, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany

08:20

WE1D-2 Optimal Design of Energy Efficient Inductive Links for Powering Implanted Devices

F. L. Cabrera, F. Rangel de Sousa, Federal University of Santa Catarina, Florianopolis, Brazil

08:40

WE1A-3 Butler Matrix Based Six-port Passive Junction

A. Moscoso-Mártir, J. Ávila-Ruiz, E. Durán-Valdeiglesias, L. Moreno-Pozas, I. Molina-Fernández, A. Ortega-Moñux, J. de-Oliva-Rubio, Málaga University, ETSI Telecomunicación, Málaga, Spain

WE1B-2 Symmetric Coupled Composite Right-/Left-Handed Transmission Line with Dual-Mode Balanced Filter Characteristics

Y. Kim[1], S. Sim[1], Y. Yoon[2], [1]Kumoh National Institute of Technology, Gyungbuk, Republic of Korea, [2]Kwandong University, Gangwon do, Republic of Korea

WE1C-2 A 28 GHz Class-J Power Amplifier with 18 dBm output power and 35% peak PAE in 120 nm SiGe BiCMOS

A. Sarkar, B. Floyd, North Carolina State University, Raleigh, United States

WE1D-3 A Low Switching Frequency AC-DC Boost Converter for Wireless Powered Miniaturized Implants

H. Jiang[1], B. Lariviere[1], J. Zhang[1], R. Fechter[2], M. Harrison[2], S. Roy[3], [1]San Francisco State University, San Francisco, United States, [2]University of California San Francisco, San Francisco, United States, [3]University of California San Francisco, San Francisco, United States

09:00

WE1A-4 Water Temperature Monitoring by Microwave Six-Port Interferometry at 24 GHz

A. Talai, S. Mann, R. Weigel, A. Koelpin, Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany

WE1B-3 A Tunable Directional Coupler with A Wide Tuning Range of Coupling Ratios

M. Zhou, J. Shao, B. Arigong, H. Ren, R. Zhou, H. Zhang, University of North Texas, Denton, United States

WE1C-3 An X- to Ka-Band Fully-Integrated Stacked Power Amplifier in 45 nm CMOS SOI Technology

S. R. Helmi, J. Chen, S. Mohammadi, Purdue University, West Lafayette, United States

WE1D-4 Radiation Efficiency of Planar Implantable Antennas at ISM Band

M. Tofighi[1], S. Huang[2], [1]Pennsylvania State University, Harrisburg, Middletown, United States, [2]Drexel University, Philadelphia, United States

09:20

WE1A-5 Fast In-Situ Diode Detector Characterization for Six-Port Interferometer Receivers

F. Barbon, S. Lindner, S. Mann, S. Linz, R. Weigel, A. Koelpin, University of Erlangen-Nuremberg, Erlangen, Germany

WE1B-4 Characterization of Liquid Crystal Polymer (LCP) From 110 GHz to 170 GHz

W. T. Khan, C. A. Donado Morcillo, A. C. Ulusoy, J. Papapolymerou, Georgia Institute of Technology, Atlanta, United States

WE1C-4 A 69-81 GHz Power Amplifier Using 90 nm CMOS Technology

J. Tsai, R. Chang, J. Lin, National Taiwan Normal University, Taipei, Taiwan

Wednesday, 22 JANUARY 2014

WisNet Session: WE2A

Advanced Localization and Sensing Technologies

Room: Grand Pacific Ballroom C/D

RWW Session: WE2B

Passive Components and Packaging II

Room: Grand Pacific Ballroom A/B

SiRF Session: WE2C

Technology Devices and Modeling

Room: Baycliff

BioWireleSS Session: WE2D

Microwaves in Biological Applications and Interaction with Biological Tissues

Room: Cardiff

10:10

WE2A-1 Advanced Multilayer Photo-imaged Substrate Integrated Waveguides and RF Front-End for Emerging mm-wave Wireless Applications

K. K. Samanta[1,2], [1]Milmega Ltd., Ryde, United Kingdom, [2]University of Leeds, Leeds, United Kingdom

WE2B-1 R10 Subcommittee Invited Paper 2

TBA

WE2C-1 A TCAD-based Roadmap for High-speed SiGe HBTs

M. Schroter[1,2], T. Rosenbaum[1], S. P. Voinigescu[3], P. Chevalier[4], [1]Technical University Dresden, Dresden, Germany, [2]University of California San Diego, La Jolla, United States, [3]University of Toronto, Toronto, Canada, [4]STMicroelectronics, Crolles, France

WE2D-1 Modeling and Characterization of a BiCMOS Embedded Microfluidic Platform for Biosensing Applications

C. B. Kaynak, M. Kaynak, M. Wietstruck, S. Marschmeyer, P. Kulse, H. Silz, A. Kruger, R. Barth, K. Schmalz, B. Tillack, IHP GmbH, Frankfurt (Oder), Germany

10:30

WE2A-2 Review on Microwave/ Millimeter-Wave Systems for Vital Sign Detection

H. Wang, J. Cheng, J. Kao, T. Huang, National Taiwan University, Taipei, Taiwan

10:30

WE2C-2 Modeling and Optimization of BiCMOS Embedded Through-Silicon Vias for RF-Grounding

M. Wietstruck[1], M. Kaynak[1], S. Marschmeyer[1], C. Wipf[1], I. Tekin[2], K. Zoschke[3], B. Tillack[1,4], [1]IHP, Frankfurt (Oder), Germany, [2]Sabanci University, Istanbul, Turkey, [3]Fraunhofer IZM, Berlin, Germany, [4]Technische Universität Berlin, Berlin, Germany

10:50

WE2A-3 Compact, Mobile, Low Power UWB System for Through-Wall Imaging

S. Magoon[1], A. E. Fathy[1], C. Thajudeen[2], A. Hoorfar[2], [1]University of Tennessee, Knoxville, United States, [2]Villanova University, Villanova, United States

WE2B-2 Tunable Liquid-Crystal Millimeter-wave Bandpass Filter Using Periodical Structure

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

WE2C-3 An Investigation of the Temperature Dependent Linearity of Weakly-Saturated, Electrically-Matched SiGe NPN and PNP HBTs

S. Jung[1], P. Song[1], I. Song[1], R. L. Schmid[1], J. D. Cressler[1], J. A. Babcock[2], [1]Georgia Institute of Technology, Atlanta, United States, [2]Texas Instruments, Santa Clara, United States

WE2D-2 Radio Frequency Detection and Analysis of Synthetic Particles

X. Hu[1,3], G. Yu[2], J. Sun[3], D. Moline[3], P. Wang[3], [1]Ohio State University, Columbus, United States, [2]University of Findlay , Findlay, United States, [3]Clemson University, Clemson, United States

11:10

WE2A-4 A SAW Delay Line Based Dual-Band Low-Power Tag for Precise Time-of-Arrival Ranging

M. Chaabane, E. M. Beibl, Technische Universität München , Munich, Germany

WE2B-3 Transmission Line Replacements for a Lumped Element Reflectionless Filter

C. Jackson, Northrop Grumman Aerospace Systems, Redondo Beach, United States

WE2C-4 Integration of a 50 V BVCEO SiGe:C HBT into a 0.25 µm SiGe:C BiCMOS Platform

R. Sorge, J. Schmidt, C. Wipf, K. Schulz, R. Pliquett, R. Barth, IHP, Frankfurt(Oder), Germany

WE2D-3 An Inexpensive Backside-Sensing Coplanar Waveguide Sensor for Characterization of Liquids and Solids up to 40 GHz

S. Liu[1], I. Ocket[2,1], B. Nauwelaers[1], D. Schreurs[1], [1]University of Leuven, Heverlee, Belgium, [2]Interuniversity Microelectronics Center, Heverlee, Belgium

11:30

WE2A-5 Mobile-phone Indoor Localization Based on Microwave Identification Using Web-access Time

M. Yamamoto[1,2], T. Ohtsuki[2], H. Utsumi[3], N. Furukawa[1], [1]Hitachi, Ltd., Tokyo, Japan, [2]Keio University, Yokohama, Japan, [3]Hitachi Solutions East Japan, Ltd., Sendai, Japan

WE2B-4 A Compact Three-Bit Reconfigurable Resonator Consisting of Lumped Elements

R. Kobayashi, T. Kato, Y. Yamao, The University of Electro-Comunications, Chofu-shi, Japan

WE2C-5 The Analysis of Transit-Time Effect of Bipolar Base Collector Junction Breakdown

X. Bi[1], D. Trombley[2], T. Krakowski[1], D. Weiser[2], [1]Texas Instruments, Santa Clara, United States, [2]Texas Instruments, Dallas, United States

WE2D-4 A Microstrip Resonant Biosensor for Aqueous Glucose Detection in Microfluidic Medical Applications

U. Schwerthoeffer, C. Warter, R. Weigel, D. Kissinger, University of Erlangen-Nuremberg, Erlangen, Germany

Wednesday, 22 JANUARY 2014

WiSNET Session: WE3A	RWS Session: WE3B	RWS Session: WE3C	WiSNET Session: WE3D
Novel Sensors and Sensor Components	**Software Defined Radios and Cognitive Radios**	**Late News**	**Insight in Sensor Network Architectures and System Design**
Room: Grand Pacific Ballroom C/D	Room: Grand Pacific Ballroom A/B	Room: Baycliff	Room: Cardiff
13:30			
WE3A-1 Optimized Design of Multi-band and Solar Rectennas *K. Niotaki[1], S. Kim[2], F. Giuppi[1], A. Collado[1], A. Georgiadis[1], M. M. Tentzeris[2], [1]CTTC, Castelldefels, Spain, [2]Georgia Institute of Technology, Atlanta, United States*	**WE3B-1 Adaptive RF Canceller for Transmit-Receive Isolation Improvement** *K. E. Kolodziej, J. G. McMichael, B. T. Perry, MIT Lincoln Laboratory, Lexington, United States*	**WE3C-1** **TBA**	**WE3D-1 Broadcast of Things – A Thought Experiment** *M. Hartmann[1], H. Tröger[1], G. Kilian[2], J. Robert[1], T. Nowak[1], A. Heuberger[1], [1]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany, [2]Fraunhofer Institute for Integrated Circuits, Erlangen, Germany*
13:50			
WE3A-2 Wireless Capacitive Pressure Sensor Operating up to 400 °C from 0 to 100 psi Utilizing Power Scavenging *M. C. Scardelletti[1], G. E. Ponchak[1], K. Harsh[2], J. A. Mackey[1], R. D. Meredith[1], C. A. Zorman[3], G. M. Beheim1, F. W. Dynys[1], G. W. Hunter[1], [1]NASA Glenn Research Center, Cleveland, United States, [2]Sporian Microsystems Inc., Lafayette, United States, [3]Case Western Reserve University, Cleveland, United States*	**WE3B-2 Energy Efficiency of Cooperative Cognitive Radio Network with Outage Constraints** *M. Naeem, K. Illanko , A. Karmokar, A. Anpalagan, M. Jaseemuddin, Ryerson University, Toronto, Canada*	**WE3C-2** **TBA**	**WE3D-2 Communication/Computation Trade-offs in Wireless Sensor Networks: Comparing Network-Level and Node-Level Strategies** *U. Yildiz, K. Bicakci, B. Tavli, TOBB University of Economics and Technology, Ankara, Turkey*
14:10			
WE3A-3 A SAW-Based 425 MHz Passive Wireless Magnetic Field Sensor *B. Li, J. Kosel, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*	**WE3B-3 SDR for SRD: ADC Specifications for Reconfigurable Gateways in Urban Sensor Networks** *M. Vallerian[1,2], G. Villemaud[2], B. Miscopein[1], T. Risset[2], F. Hutu[2], [1]Orange-Labs, Meylan, France, [2]Universite de Lyon, INRIA, INSA de Lyon, CITI-INRIA, Villeurbanne, France*	**WE3C-3** **TBA**	**WE3D-3 Enhanced Accuracy for a Complex Image Theory Position Estimator using Frequency Diversity** *M. S. Trotter[1], J. D. Griffin[1], D. S. Ricketts[2], [1]Disney Research, Pittsburgh, United States, [2]North Carolina State University, Raleigh, United States*
14:30			
WE3A-4 Wireless Seismometer for Venus *G. E. Ponchak[1], M. C. Scardelletti[1], B. Taylor[2], S. Beard[2], B. Clougherty[2], R. D. Meredith[1], G. M. Beheim[1], W. S. Kiefer[3], G. W. Hunter[1], [1]NASA Glenn Research Center, Cleveland, United States, [2]INPROX Technology Corp., Boston, United States, [3]Lunar and Planetary Inst., Houston, United States*	**WE3B-4 Highly Flexible Cognitive Radio Spectrum Sensing Front-End** *P. Lohmiller[1], A. Elsokary[1], S. Chartier[2], H. Schumacher[1], [1]Ulm University, Ulm, Germany, [2]Cassidian, Ulm, Germany*	**WE3C-4** **TBA**	**WE3D-4 System and Signal Design for an Energy-efficient Multi-frequency Localization System** *T. Nowak[1], M. Hierold[2], A. Köelpin[2], M. Hartmann[1], H. Tröger[1], J. Thielecke[1], [1]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany*
14:50			
WE3A-5 Analysis of Phase Sampling Noise of Switched Injection-locked Oscillators *A. Strobel[1], M. Schulz[1], F. Ellinger[1], C. Carlowitz[2], M. Vossiek[2], [1]Technische Universität Dresden, Dresden, Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany*	**WE3B-5 A 5-Level Efficient IFPWM Power Coding Approach Encoding LTE for Class-S Digital-RF Transmitter with Distortion Correction** *Q. Zhu[1,2], R. Ma[1], [1]Mitsubishi Electric Research Laboratories, Cambridge, United States, [2]Illinois Institute of Technology, Chicago, United States*	**WE3C-5** **TBA**	

Joint RWW Interactive Poster Session
12:50-14:40

WE3P: Transceivers and Front-end Technologies SOC and SiP

Room: Newport Coast Ballroom

WE3P-1 A 12.1 mW 50~67 GHz Up-Conversion Mixer with 6 dB Conversion Gain and 30.7 dB LO-RF Isolation in 90 nm CMOS
Y. Lin, C. Wang, W. Wen, T. Tsai, National Chi Nan University, Puli, Taiwan

WE3P-2 A 5.5 GHz Low-Power PLL Using 0.18 µm CMOS Technology
J. Tsai, . Huang, J. Chou, National Taiwan Normal University, Taipei, Taiwan

WE3P-3 A 9.96 mW 3.24±0.5 dB NF 1.9~22.5 GHz Wideband Low-Noise Amplifier Using 90 nm CMOS Technology
Y. Lin, C. Wang, J. Lee, National Chi Nan University, Puli, Taiwan

WE3P-4 A Simple Closed-Form Analysis of Clapp Oscillator Output Power Using a Novel Quasi-Linear Transistor Model
O. Lunden, K. Konttinen, M. Hasani, Tampere University of Technology, Tampere, Finland

WE3P-5 Planar Antipodal Linearly Tapered Slot Antenna using Grounded Coplanar Waveguide-to-Substrate Integrated Waveguide Transition for Passive Millimeter-Wave Imaging
W. Wang[1,2], X. Wang[1], A. E. Fathy[2], [1]Beijing Institute of Technology, Beijing, China, [2]University of Tennessee, Knoxville, United States

WE3P-6 A Wideband Phase Modulation Technique Adopting Fractional-N Direct Digital Frequency Synthesizer
B. Zhang, F. You, R. Tong, S. He, University of Electronic Science and Technology of China, Chengdu, China

WE3P-7 Full Duplex Prototype of OFDM on GNURadio and USRPs
W. Zhou, G. Villemaud, T. Risset, Université de Lyon, INRIA, INSA-Lyon, Villeurbanne, France

WE3P-8 Analysis and Reduction of the Impact of Thermal Noise on the Full-Duplex OFDM Radio
Z. Zhan, G. Villemaud, J. Gorce, Université de Lyon, INRIA, INSA-Lyon, CITI-INRIA, Villeurbanne, France

WE3P-9 Development of a Wide-Band Modem for a 21 GHz Band Satellite Broadcasting System
Y. Matsusaki, M. Nagasaka, Y. Suzuki, S. Nakazawa, M. Kamei, A. Hashimoto, T. Kimura, S. Tanaka, T. Ikeda, NHK, Setagaya-ku, Japan

WE3P-10 Effect of Different Platforms on Coupling Compensation Matrices in AOA Estimation Algorithms Using Small Size UCA
T. S. Ghazaany[1,2], S. Zhu[1,2], S. M. Jones[1], R. A. Alhameed[1], J. M. Noras[1], T. Van Buren[2], S. Marker[2], [1]University of Bradford, Bradford, United Kingdom, [2]Seven Technologies Group-Datong, Leeds, United Kingdom

WE3P-11 Energy Harvesting with a Low-Cost and High Efficiency Rectenna for Low-Power Input
S. D. Assimonis, A. Bletsas, Technical University of Crete, Chania, Greece

WE3P-12 Using OFDM Pilot Tones for Spectrum Sensing with Applications to Mobile WiMAX
A. G. Temtam, D. C. Popescu, Old Dominion University, Norfolk, United States

WE3P-13 Dielectric Load in Short Standard Conical Horns for Satellite Applications
M. Reyes-Ayala[1,2], H. Jardon-Aguilar[1], [1]CINVESTAV-IPN, Gustavo A. Madero, Mexico, [2]Metropolitan Autonomous University, Azcapotzalco, Mexico

WE3P-14 GPU Accelerated Channel Modeling Ray Tracing Tool
A. S. Abdellatif, S. Safavi-Naeini, University of Waterloo, Waterloo, Canada

WE3P-15 Towards Low Power Consumption MMIC UWB Localization System
E. Elkhouly[1], M. Kuhn[1], D. Lin[2], A. E. Fathy[1], [1]University of Tennessee, Knoxville, United States, [2]Ulm University, Ulm, Germany

WE3P-16 Enhancing Open Loop Beamsteering Performance for the Uplink of UMTS/HSPA+ under Discontinuous Transmission
S. Schroeter, S. Riess, R. Weigel, G. Fischer, University of Erlangen-Nuremberg, Erlangen, Germany

WE3P-17 A Dynamic Power Allocation and Relay Selection Scheme for Energy-Harvesting Wireless Networks
G. Li[1], S. Zhu[1], P. Ren[1], H. Hui[2], [1]Xi'an Jiaotong University, Xi'an, China, [2]Xi'an University of Technology, Xi'an, China

WE3P-18 Linear-Frequency-Modulated Continuous-Wave Radar for Vital-Sign Monitoring
G. Wang[1], J. Muñoz-Ferreras[2], C. Gu[1], C. Li[1], R. Gómez-García[2], [1]Texas Tech University, Lubbock, United States, [2]University of Alcalá, Alcalá de Henares, Spain

WE3P-19 Design of Wireless Waist-Mounted Vital Sensor Node for Athletes -- Performance Evaluation of Microcontrollers Suitable for Signal Processing of ECG Signal at Waist Part
S. Okamoto[1], T. Tsujioka[1], S. Hara[1], H. Nakamura[2], T. Kawabata[3], K. Watanabe[4], M. Ise[4], N. Arime[4], H. Okuhata[4], [1]Osaka City University (School of Engg.), Osaka, Japan, [2]Osaka City University (School of Medicine), Osaka, Japan, [3]Kansai University, Osaka, Japan, [4]Synthesis Corporation, Osaka, Japan

WE3P-20 Electrothermal Modeling of PIN Diode Protection Circuits in MRI Surface Coils
R. H. Caverly, Villanova University, Villanova, United States

WE3P-21 A K-band BiCMOS Low Duty-cycle Resistive Mixer
A. Magnani[1,2], C. Viallon[1], I. Burciu[1], T. Epert[1,3], M. Borgarino[2], T. Parra[1], [1]University of Toulouse, Toulouse, France, [2]University of Modena and Reggio Emilia, Modena, Italy, [3]AXESS Europe, Toulouse, France

WE3P-22 Charging Mechanisms in Nanostructured Dielectrics for MEMS Capacitive Switches
G. Papaioannou[1], L. Michalas[1], M. Koutsoureli[1], S. Bansropun[2], A. Gantis[1], A. Ziaei[2], [1]University of Athens, Athens, Greece, [2]Thales Research and Technology France, Palaiseau, Paris, France

Newport Beach Marriott Hotel & Spa

Wednesday, 22 JANUARY 2014

WiSNet Session: WE4A

Progress in Sensor Systems

Room: Grand Pacific Ballroom C/D

RWW Session: WE4B

Wireless System Architecture and Modeling

Room: Grand Pacific Ballroom A/B

SiRF Session:WE4C

Circuits

Room: Baycliff

RWW Session: WE4D

Digital Signal Processing as Applied to Wireless

Room: Cardiff

15:40

WE4A-1 SIW Components and Antennas Based on Eco-friendly Materials and Technologies: State-of-the-Art and Future Applications

M. Bozzi, R. Moro, University of Pavia, Pavia, Italy

WE4B-1 Wake-Up Radio Architecture for Home Wireless Networks

F. Hutu, A. Khoumeri, G. Villemaud, J. Gorce, Université de Lyon, INRIA, Villeurbanne, France

WE4C-1 Novel Frequency Quadrupler Design Covering the Entire V Band in 0.13 µm SiGe Process

S. Yuan, H. Schumacher, Ulm University, Ulm, Germany

WE4D-1 Indoor Localization Based on Feed-forward Neural Networks and CIR Fingerprinting Techniques

R. Zouari, R. Zayani, R. Bouallegue, Innov'Com Carthage University, Ariana, Tunisia

16:00

WE4A-2 Network Demonstration of Low-cost and Ultra-Low-Power Environmental Sensing with Analog Backscatter

E. Kampianakis, S. D. Assimonis, A. Bletsas, Technical University of Crete, Chania, Greece

WE4B-2 Exploiting Hidden Markov Models in Identifying Passive UHF RFID Tags

B. A. Alsaify[1,2], D. R. Thompson[2], J. Di[2], [1]Yarmouk University, Irbid, Jordan, [2]University of Arkansas, Fayetteville, United States

WE4C-2 A 20 GHz VCO and Frequency Doubler for W-band FMCW Radar Applications

W. Wang[1], Y. Takeda[2], Y. Yeh[1], B. A. Floyd[1], [1]North Carolina State University, Raleigh, United States, [2]Asahi-Kasei Microdevices Corp., Kanagawa, Japan

WE4D-2 A New Efficient Approach for Modeling the Ultra Wide Band Systems. Applications for Links Involving Wireless Digital Communications

R. G. Caputo[1], G. V. Figueiredo[1], M. Silveira[2], [1]Pulse Perfect Science and Technology, Geneva, United States, [2]Federal University of ABC, Santo Andre, Brazil

16:20

WE4A-3 Development of Ploughable RFID Sensor Network Systems for Precision Agriculture

C. Wang, D. George, P. R. Green, University of Manchester, Manchester, United Kingdom

WE4B-3 Protocol Analysis of Signal Detection for Deriving Minimum Isolation Distance for Frequency Recycling under WLAN Systems

M. Goto[1], O. Takyu[1], T. Fujii[2], F. Sasamori[1], S. Handa[1], [1]Shinshu University, Nagano, Japan, [2]The University of Electro-Communications, Chofu, Japan

WE4C-3 2.4 GHz / 3.5 GHz Dual-Band Wide-Tuning-Range Quadrature VCO using Harmonic-Injection Coupling Technique

M. Wei[1], S. Chang[3], Y. Zhang[2], Y. Yang[4], R. Negra[1], [1]RWTH Aachen University-Mixed Signal CMOS Circuits, Aachen, Germany, [2]RWTH Aachen University-Integrated Analog Circuits and RF Systems, Aachen, Germany, [3]National Chung Cheng University, Chiayi, Taiwan, [4]Taiwan Semiconductor Manufacturing Company, Hsinchu, Taiwan

WE4D-3 Joint Estimation of Transmitter IQ Imbalances and Timing Skew in OFDM WLAN Systems

Y. U. Itankar, P. K. Nerella, N. A. Deshmukh, National Instruments, Bangalore, India

16:40

WE4A-4 Adaptive Wireless Sensor Networks for High-Definition Monitoring in Sustainable Agriculture

A. Rodríguez de la Concepción, R. Stefanelli, D. Trinchero, iXem Labs - Politecnico di Torino, Torino, Italy

WE4B-4 Data-Dependent Transmitter Fingerprints for Radio Authentication

A. Mahmood, M. A. Jensen, Brigham Young University, Provo, United States

WE4C-4 K-Band Differential and Quadrature Digitally-Controlled Oscillator Designs in SiGe BiCMOS Technology

C. A. Maxey, S. Raman, Virginia Tech, Arlington, United States

WE4D-4 Digital Correlation Receiver for Improving Equivalent Time Sampled Pulse in Ultra WideBand Localization System

A. Kheirdoost[1,2], G. Moradi[2], E. Elkholy[1], A. Fathy[1], [1]University of Tennessee, Knoxville, United States, [2]Amirkabir University of Technology, Tehran, Iran

17:00

WE4A-5 Efficient Power Supply for Telemetry Sensor Nodes

H. Tröger[1], G. Kilian[2], J. Robert[1], M. Hartmann[1], T. Nowak[1], M. Meyer[1], A. Heuberger[1,2], [1]Friedrich-Alexander-Universität (FAU), Erlangen, Germany, [2]Fraunhofer Institute for Integrated Circuits (IIS), Erlangen, Germany

WE4B-5 Energy Consumptions Analysis for a Class of Symmetric Encryption Algorithm

W. Y. Zibideh[1], M. M. Matalgah[2], [1]Qualcomm Technologies Inc., San Diego, United States, [2]University of Mississippi, University, United States

WE4D-5 Streamlined MIMO Cross-Over Digital Predistortion

M. Vejdaniamiri , M. Helaoui, F. Ghannouchi, University of Calgary, Calgary, Canada