

# **2014 IEEE Radio and Wireless Symposium**

**(RWS 2014)**

**Newport Beach, California, USA  
19-23 January 2014**



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## SESSION LIST

- ❖ MO1D : High-speed and BroadBand Wireless Technologies
- ❖ MO2D : Emerging Wireless Technologies and Applications
- ❖ MO3A : Millimeter-Wave Antennas
- ❖ MO3B : Advanced Transceiver Technologies I (RWS-SiRF Joint Session)
- ❖ MO3D : MIMO Signal Processing and Smart Antennas I
- ❖ MO4A : Advanced Antenna Technologies
- ❖ MO4D : Advanced Transceiver Technologies II
- ❖ TU1B : Transceivers and Front-end Technologies SOC and SiP I
- ❖ TU3A : Novel Passive Antennas
- ❖ TU3B : Propagation Channel Modeling and Utilization
- ❖ TU5A : MIMO Signal Processing and Smart Antennas II
- ❖ TU5B : Late News I
- ❖ TU5C : Late News II
- ❖ WE1B : Passive Components and Packaging I
- ❖ WE2B : Passive Components and Packaging II
- ❖ WE3B : Software Defined Radios and Cognitive Radios
- ❖ WE3C : Late News III
- ❖ WE3P : Transceivers and Front-end Technologies SOC and SiP II  
(Joint RWW Interactive Poster Session)
- ❖ WE4B : Wireless System Architecture and Modeling
- ❖ WE4D : Digital Signal Processing as Applied to Wireless

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## MO1D: High-speed and BroadBand Wireless Technologies

Chair: *Juan Jose Vegas Olmos, Technical University of Denmark, Denmark*

Venue: *Grand Pacific Ballroom C, 08:00 - 09:40, Monday 20 January 2014*

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PAGE 1  
MO1D-1  
08:00



**Full-Dimensional MIMO for Future Cellular Networks (*Invited Paper*)**  
(*Salam Akoum, Joydeep Acharya*)

PAGE 4  
MO1D-2  
08:40



**High Capacity Wireless Data Links in the W-Band Using Hybrid Photonics-Electronic Techniques for Signal Generation and Detection**  
(*J.J. Vegas Olmos, I. Tafur Monroy*)

PAGE 7  
MO1D-3  
09:00



**10Gbps Outdoor Mobile Communication Experiment Employing CoMP in 11GHz Band**  
(*Mitsuru Takahashi, Satoshi Suyama, Hiroshi Suzuki, Kazuhiko Fukawa*)

PAGE 10  
MO1D-4  
09:20



**Multi-Gigabit Data Transmission Using MMIC-Based E-Band Frontends**  
(*J. Antes, F. Boes, D. Meier, Ulrich J. Lewark, Axel Tessmann, Arnulf Leuther, Ralf Henneberger, Ingmar Kallfass*)

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## MO2D: Emerging Wireless Technologies and Applications

Chair: *Sergio Pacheco, Freescale, USA*

Venue: *Grand Pacific Ballroom C, 10:10 - 11:50, Monday 20 January 2014*

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PAGE 13  
MO2D-1  
10:10



**A Wideband Flexible Digital Receiver Using Polyphase Harmonic Mixer (*Invited Paper*)**  
(*Won Namgoong*)

PAGE 16  
MO2D-2  
10:50



**Design of Touch-Sensitive Surface with Arbitrary Shape Based on Time-Domain Reflectometry Using Inkjet Printing**  
(*Minh Quan Duong, Yoshihiro Kawahara, Tohru Asami*)

PAGE 19  
MO2D-3  
11:10



**High Dynamic-Range and Sensitivity Six-Port Receiver Using Reactive Matching Technique**  
(*Saad Qayyum, Muh-Dey Wei, Renato Negra*)

MO2D-4  
11:30



**Optimal Bits per Joule Power Allocation for Multiuser Cognitive Radio Networks**  
(*M. Naeem, K. Illanko, A. Karmokar, A. Anpalagan, M. Jaseemuddin*)

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## MO3A : Millimeter-Wave Antennas

Chair: Goutam Chattopadhyay, NASA - Jet Propulsion Laboratory, USA

Venue: Grand Pacific Ballroom A/B, 13:30 - 15:10, Monday 20 January 2014

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PAGE 25  
MO3A-1  
13:30



### **Design and Measurement of Substrate-Integrated Planar Millimeter Wave Antenna Arrays at 60-325GHz (Invited Paper)**

*(Zhi Ning Chen, Xianming Qing, Siew Bee Yeap, Junfeng Xu)*

PAGE 28  
MO3A-2  
14:10



### **Investigating the Effect of Grounding GPS Antennas on Their Radiation Properties on Vehicular Platforms**

*(Daniel N. Aloï, Elias Ghafari, Ashley Steffes, Mohammad S. Sharawi)*

PAGE 31  
MO3A-3  
14:30



### **A 60GHz Passive Repeater with Endfire Radiation Using Dielectric Resonator Antennas**

*(Duo Wang, Raphaël Gillard, Renaud Loison)*

PAGE 34  
MO3A-4  
14:50



### **Hetero-Plane Beam Synthesis Using 60GHz Band 3-D Phased Array Antenna Module**

*(Yuya Suzuki, Satoshi Yoshida, Suguru Kameda, Noriharu Suematsu, Akinori Taira, Tadashi Takagi, Kazuo Tsubouchi)*

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## MO3B : Advanced Transceiver Technologies I (RWS-SiRF Joint Session)

Chair: Vijay Nair, Intel Corporation, USA

Venue: Baycliff, 13:30 - 15:10, Monday 20 January 2014

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PAGE 37  
MO3B-2  
14:10



### **A 1.2V, 2.7mA Receiver Front-End for Bluetooth Low Energy Applications**

*(Lei Liao, Aytac Atac, Ye Zhang, Yifan Wang, Zhimiao Chen, Martin Schleyer, Ralf Wunderlich, Stefan Heinen)*

PAGE 40  
MO3B-4  
14:50



### **Universal Wideband Reconfigurable Transceiver with Extended Frequency Range up to 6GHz**

*(Erick González-Rodríguez, Holger Maune, Yuliang Zheng, Rolf Jakob)*

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## MO3D: MIMO Signal Processing and Smart Antennas I

Chair: Cagri Uluşoy, Georgia Institute of Technology, USA

Venue: Grand Pacific Ballroom C, 13:30 - 15:10, Monday 20 January 2014

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- PAGE 43  
MO3D-1  
13:30  **Prototyping and Performance Evaluation of TDD-Based  $2 \times 2$  MIMO-OFDM Transceiver**  
(Kazuhiko Mitsuyama, Naoto Kogo, Fumiki Uzawa, Naohiko Iai)
- PAGE 46  
MO3D-2  
13:50  **Nonlinear Distortion Suppression Scheme Employing Transmit Power Control for MU-MIMO-OFDM Systems**  
(Gen Osada, Shoya Takebuchi, Fumiaki Maehara)
- PAGE 49  
MO3D-3  
14:10  **Indoor Experiment of 8-by-2 Multiuser MIMO Transmission Using Tomlinson-Harashima-Precoding Subject to Limited CSI Feedback**  
(Yasuyuki Hatakawa, Tomoko Matsumoto, Koichiro Kitagawa, Satoshi Konishi)
- PAGE 52  
MO3D-4  
14:30  **Joint Direction-of-Departure and Direction-of-Arrival Estimation in an Ultra-Wideband MIMO Radar System**  
(Idnin Pasya, Naohiko Iwakiri, Takehiko Kobayashi)
- PAGE 55  
MO3D-5  
14:50  **Development of Multiuser MIMO Testbed Adopting Tomlinson-Harashima Precoding and Limited CSI Feedback**  
(Tomoko Matsumoto, Yasuyuki Hatakawa, Koichiro Kitagawa, Satoshi Konishi)
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## MO4A: Advanced Antenna Technologies

Chair: Goutam Chattopadhyay, NASA - Jet Propulsion Laboratory, USA

Venue: Grand Pacific Ballroom A/B, 15:40 - 17:20, Monday 20 January 2014

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- PAGE 58  
MO4A-1  
15:40  **Realizing Non-Foster Reactances Using Negative-Group-Delay Networks and Applications to Antennas (Invited Paper)**  
(Hassan Mirzaei, George V. Eleftheriades)
- PAGE 61  
MO4A-2  
16:20  **Design of Rectenna Array Panel Taking into Account Mutual Coupling for RF Energy Harvesting**  
(Hirokazu Kamoda, Masahiro Hanazawa, Shoichi Kitazawa, Hiroshi Ban, Naoya Kukutsu, Kiyoshi Kobayashi)
- PAGE 64  
MO4A-3  
16:40  **Variable Beamwidth Shorted Patch Antenna Array for Indoor Positioning**  
(Hisanori Matsumoto, Makoto Tanikawara, Tomohisa Kohiyama)
- PAGE 67  
MO4A-4  
17:00  **A High Efficiency, Electrically-Small, 3-D Machined-Substrate Antenna Fabricated with Fused Deposition Modeling and 3-D Printing**  
(Ibrahim T. Nassar, Harvey Tsang, Kenneth Church, Thomas M. Weller)

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## MO4D: Advanced Transceiver Technologies II

Chair: *Xin Wang, OmniVision Technologies Inc.*

Venue: *Grand Pacific Ballroom C, 15:40 - 17:20, Monday 20 January 2014*

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PAGE 70  
MO4D-1  
15:40



**Antenna Integration for SiP Systems (Invited Paper)**  
(*Walter De Raedt, Steven Brebels*)

PAGE 73  
MO4D-2  
16:20



**A 21.1mW 6.2dB NF 77~81GHz CMOS Low-Noise Amplifier with  $13.5 \pm 0.5$ dB  $S_{21}$  and Excellent Input and Output Matching for Automotive Radars**  
(*Yo-Sheng Lin, Guan-Lin Lee, Chien-Chin Wang, Chih-Chung Chen*)

PAGE 76  
MO4D-3  
16:40



**3D-Integrated, Low-Height, Small Module Design Techniques for 4.48GHz, 560MHz-Bandwidth TransferJet Transceiver**

(*Kenichi Agawa, Ichiro Seto, Akihiko Happonya, Yoshihiro Iida, Yusuke Imaizumi, Motochika Okano, Daigo Suzuki, Yuichi Sato, Masaomi Iwanaga, Kazumi Sato, Satoshi Arai, Noriaki Uchida, Koji Ryugo, Daisuke Miyashita, Ryuichi Fujimoto, Yasuo Unekawa*)

PAGE 79  
MO4D-4  
17:00



**Compact 120-140GHz Radar Tx/Rx Sensors with On-Chip Antenna**  
(*Shuai Yuan, Andreas Strodl, Václav Valenta, Andreas Trasser, Hermann Schumacher*)

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## TU1B: Transceivers and Front-end Technologies SOC and SiP I

Chair: *Wasif T. Khan, Georgia Institute of Technology, USA*

Co-Chair: *Ahmet C. Ulusoy, Georgia Institute of Technology, USA*

Venue: *Grand Pacific Ballroom A/B, 08:00 - 09:20, Tuesday 21 January 2014*

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PAGE 82  
TU1B-1  
08:00



**Design of Low Phase-Noise Voltage-Controlled Oscillator Using Tunable Evanescent-Mode Cavity**  
(*Yuhao Liu, Akash Anand, Xiaoguang Liu*)

PAGE 85  
TU1B-2  
08:20



**MMIC-Based Module-Level Frequency Generation for E-Band Communication Systems**  
(*Ulrich J. Lewark, J. Antes, Michael Kuri, Ralf Henneberger, Axel Tessmann, Sandrine Wagner, Arnulf Leuther, Thomas Zwick, Ingmar Kallfass*)

PAGE 88  
TU1B-3  
08:40



**A Simple Closed-Form Analysis of Clapp Oscillator Output Power Using a Novel Quasi-Linear Transistor Model**  
(*Olli-Pekka Lundén, Kristian Kontinen, Masoumeh Hasani*)

PAGE 91  
TU1B-4  
09:00



**A DC to 2GHz Downconverter with Image Rejection and High Blocker Tolerance for Cognitive Radios**  
(*Amr Fahim*)

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## TU3A: Novel Passive Antennas

Chair: *Glauco Fontgalland, Universidade Federal de Campina Grande, Brazil*

Venue: *Grand Pacific Ballroom C/D, 13:30 - 14:50, Tuesday 21 January 2014*

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- PAGE 94  
TU3A-1  
13:30  **A CPW Fed Rectangular Slot Antenna for Wideband Circular Polarization**  
(*V.S. Ram Krishna R., Raj Kumar*)
- TU3A-2  
13:50  **Design of CPW Feed Printed Monopole Antenna for Dual Polarization**  
(*Raj Kumar, V.S. Ram Krishna R.*)
- PAGE 100  
TU3A-3  
14:10  **Miniaturized Tunable Conical Helix Antenna**  
(*S. Zhu, T.S. Ghazaany, R.A. Abd-Alhameed, S.M.R. Jones, J.M. Noras, T. Suggett, S. Marker*)
- PAGE 103  
TU3A-4  
14:30  **Slotted Microstrip Patch Antenna with Embedded Feed**  
(*Shreya S. Menon, Prafulla Deo, Dariush Mirshekar-Syahkal*)
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## TU3B: Propagation Channel Modeling and Utilization

Chair: *TBA*

Venue: *Grand Pacific Ballroom A/B, 13:30 - 14:50, Tuesday 21 January 2014*

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- PAGE 106  
TU3B-1  
13:30  **Performance Analysis of Cognitive Radio Networks Over  $\kappa$ - $\mu$  Fading Channel with Noise Uncertainty**  
(*Fábio von Glehn, Ugo Silva Dias*)
- PAGE 109  
TU3B-2  
13:50  **Modeling the Influence of Wall Roughness on Tunnel Propagation**  
(*Chenming Zhou, Joseph Waynert*)
- PAGE 112  
TU3B-3  
14:10  **Path Loss Evaluation for Mobile-to-Mobile Wireless Channel**  
(*S. Zhu, T.S. Ghazaany, S.M.R. Jones, R.A. Abd-Alhameed, J.M. Noras, T. Van Buren, A. Merrell*)
- PAGE 115  
TU3B-4  
14:30  **Wideband MIMO Channel Sounding Setup for 2.4GHz ISM Band**  
(*Farzad Talebi, Thomas G. Pratt*)

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## TU5A: MIMO Signal Processing and Smart Antennas II

Chair: Hideki Ochiai, Yokohama National University, Japan

Co-Chair: Alessandra Costanzo, University of Bologna, Italy

Venue: Grand Pacific Ballroom C/D, 16:00 - 17:20, Tuesday 21 January 2014

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PAGE 118  
TU5A-1  
16:00



**Nonlinear/Electromagnetic Approach for Time-Modulated Array Simulation**  
(*Diego Masotti, Paolo Francia, Alessandra Costanzo, Vittorio Rizzoli*)

PAGE 121  
TU5A-2  
16:20



**Semi-Blind Interference Alignment Over Correlated Wireless Channels**  
(*M. Takai, K. Ishibashi, T. Wada*)

PAGE 124  
TU5A-3  
16:40



**A Rapid Direction of Arrival Estimation Procedure for Adaptive Array Antennas Covered by a Shaped Dielectric Lens**  
(*Ravishankar S., Dharshak B.*)

PAGE 127  
TU5A-4  
17:00



**Effect of PAPR Reduction to BS Cooperation MIMO Systems Under Multi-Cell Environment**  
(*Ryo Myoenzono, Osamu Takyu, Fumihito Sasamori, Shiro Handa*)

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## TU5B: Late News I

Chair: Kevin Chuang, MIT Lincoln Laboratory, USA

Venue: Grand Pacific Ballroom A/B, 16:00 - 17:00, Tuesday 21 January 2014

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PAGE 130  
TU5B-1  
16:00



**A 5-5.8GHz Fully-Integrated CMOS PA for WLAN Applications**  
(*Jeng-Han Tsai, Hong-Wun Ou-Yang*)

PAGE 133  
TU5B-2  
16:20



**Advanced Transmitters with Combined Crest Factor Reduction and Digital Predistortion Techniques**  
(*A. Farabegoli, Bernhard Sogel, Jan-Erik Mueller, Robert Weigel*)

PAGE 136  
TU5B-3  
16:40



**Three-Way Doherty Power Amplifier for Efficient Amplification of Wideband Signals with Extended PAPR**  
(*Hamed Golestaneh, Foad Arfaei Malekzadeh, Slim Boumaiza*)



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## TU5C: Late News II

Chair: Cagri Ulusoy, Georgia Institute of Technology, USA

Venue: Baycliff, 16:00 - 17:00, Tuesday 21 January 2014

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PAGE 139  
TU5C-1  
16:00



### Measurement Setup for Linear Characterization of a Mixed-Signal SoC Wideband Receiver

(Pedro Miguel Cruz, Diogo C. Ribeiro, Nuno Borges Carvalho)

PAGE 142  
TU5C-2  
16:20



### Recent Results of High-Resolution Wireless Indoor Positioning Based on IEEE 802.11ac

(Abdo Gaber, Abbas Omar)

PAGE 145  
TU5C-3  
16:40



### A Radio System Design Tool for Forward Error Corrections in Wireless CSMA Networks: Analysis and Economics

(Haifeng Zhu, Sanjay Bajekal, Vijay Lakamraju, Brian Murray)

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## WE1B: Passive Components and Packaging I

Chair: Roberto Gomez Garcia, University of Alcala, Spain

Co-Chair: Dariush Mirshekar-Syahkal, University of Essex, UK

Venue: Grand Pacific Ballroom A/B, 08:00 - 09:40, Wednesday 22 January 2014

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PAGE 148  
WE1B-1  
08:00



### Time-Varying Transmission Lines (TVTL) — A New Pathway to Non-Reciprocal and Intelligent RF Front-Ends (*Invited Paper*)

(Yuanxun Ethan Wang)

PAGE 151  
WE1B-2  
08:40



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

(Young Kim, Seok-Hyun Sim, Young-Chul Yoon)

PAGE 154  
WE1B-3  
09:00



### A Tunable Directional Coupler with a Wide Tuning Range of Coupling Ratios

(Mi Zhou, Jin Shao, Bayaner Arigong, Han Ren, Rongguo Zhou, Hualiang Zhang)

PAGE 157  
WE1B-4  
09:20



### Characterization of Liquid Crystal Polymer from 110GHz to 170GHz

(Wasif T. Khan, Carlos A. Donado Morcillo, A. Çağrı Ulusoy, John Papapolymerou)

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## WE2B: Passive Components and Packaging II

Chair: Rashaunda Henderson, University of Texas at Dallas, USA

Co-Chair: Roberto Gomez Garcia, University of Alcala, Spain

Venue: Grand Pacific Ballroom A/B, 10:10 - 11:50, Wednesday 22 January 2014

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- PAGE 160  
WE2B-1  
10:10  **Frequency-Asymmetrical Signal-Interference Microwave Planar Filters Based on Stub-Loaded Transversal Filtering Sections (*Invited Paper*)**  
(Raúl Loeches-Sánchez, Miguel-Ángel Sánchez-Soriano, Roberto Gómez-García)
- PAGE 163  
WE2B-2  
10:50  **Tunable Liquid-Crystal Millimeter-Wave Bandpass Filter Using Periodical Structure**  
(Mani Yazdanpanahi, Prafulla Deo, Dariush Mirshekar-Syahkal)
- WE2B-3  
11:10  **Transmission Line Replacements for a Lumped Element Reflectionless Filter**  
(Charlie Jackson)
- PAGE 169  
WE2B-4  
11:30  **A Compact Three-Bit Reconfigurable Resonator Consisting of Lumped Elements**  
(Ryosuke Kobayashi, Takumi Kato, Yasushi Yamao)
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## WE3B: Software Defined Radios and Cognitive Radios

Chair: Abbas Omar, The University of Akron, USA

Venue: Grand Pacific Ballroom A/B, 13:30 - 15:10, Wednesday 22 January 2014

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- PAGE 172  
WE3B-1  
13:30  **Adaptive RF Canceller for Transmit-Receive Isolation Improvement**  
(K.E. Kolodziej, J.G. McMichael, B.T. Perry)
- PAGE 175  
WE3B-2  
13:50  **Energy Efficiency of Cooperative Cognitive Radio Network with Outage Constraints**  
(M. Naeem, K. Illanko, A. Karmokar, A. Anpalagan, M. Jaseemuddin)
- PAGE 178  
WE3B-3  
14:10  **SDR for SRD: ADC Specifications for Reconfigurable Gateways in Urban Sensor Networks**  
(Mathieu Vallérian, Guillaume Villemaud, Benoit Miscopain, Tanguy Risset, Florin Hutu)
- PAGE 181  
WE3B-4  
14:30  **Highly Flexible Cognitive Radio Spectrum Sensing Front-End**  
(Peter Lohmiller, Ahmed Elsokary, Sébastien Chartier, Hermann Schumacher)
- PAGE 184  
WE3B-5  
14:50  **A 5-Level Efficient IFPWM Power Coding Approach Encoding LTE for Class-S Digital-RF Transmitter with Distortion Correction**  
(Qiuyao Zhu, Rui Ma, Chunjie Duan, Kenji Mukai, Shintaro Shinjo, Koon Hoo Teo)






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## WE3C: Late News III

Chair: Kevin Chuang, MIT Lincoln Laboratory, USA

Venue: Baycliff, 13:30 - 15:10, Wednesday 22 January 2014



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- PAGE 187  
WE3C-1  
13:30  **Phase Noise Reduction and Spurious Suppression in Oscillators Utilizing Self-Injection Loops**  
(*Li Zhang, Ajay Poddar, Ulrich Rohde, Afshin S. Daryoush*)
- PAGE 190  
WE3C-2  
13:50  **Optimized Design of Harmonic-Injection Dividers**  
(*Franco Ramírez, Almudena Suárez*)
- PAGE 193  
WE3C-3  
14:10  **High Speed SAR ADC Using Fast Conversion Loop**  
(*Masoud Ensafdar, Won Namgoong*)
- PAGE 196  
WE3C-4  
14:30  **Design and Fabrication of CPW to Dielectric Image-Guide Transitions at 60GHz on SOI**  
(*Mohamed Basha, Behzad Biglarbegan, Soren Gigoyan, Safieddin Safavi-Naeini*)
- PAGE 199  
WE3C-5  
14:50  **Low-Loss, Wideband SPDT Switches and Switched-Line Phase Shifter in 180-nm RF CMOS on SOI Technology**  
(*Adilson S. Cardoso, Prabir Saha, Partha S. Chakraborty, David M. Fleischhauer, John D. Cressler*)
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## WE3P: Transceivers and Front-end Technologies SOC and SiP II (Joint RWW Interactive Poster Session)

Venue: Newport Coast Ballroom, 12:50 - 14:40, Wednesday 22 January 2014

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- PAGE 202  
WE3P-1  
12:50  **A 12.1mW 50~67GHz Up-Conversion Mixer with 6dB Conversion Gain and 30.7dB LO-RF Isolation in 90nm CMOS**  
(*Yo-Sheng Lin, Chien-Chin Wang, Wei-Chen Wen, Tzung-Min Tsai*)
- PAGE 205  
WE3P-2  
12:50  **A 5.5GHz Low-Power PLL Using 0.18- $\mu$ m CMOS Technology**  
(*Jeng-Han Tsai, Shao-Wei Huang, Jian-Ping Chou*)
- PAGE 208  
WE3P-3  
12:50  **A 9.96mW 3.24 $\pm$ 0.5dB NF 1.9~22.5GHz Wideband Low-Noise Amplifier Using 90nm CMOS Technology**  
(*Yo-Sheng Lin, Chien-Chin Wang, Jen-How Lee*)
- PAGE 211  
WE3P-5  
12:50  **Planar Antipodal Linearly Tapered Slot Antenna Using Grounded Coplanar Waveguide-to-Substrate Integrated Waveguide Transition for Passive Millimeter-Wave Imaging**  
(*Wen Wang, Xuetian Wang, Aly E. Fathy*)
- PAGE 214  
WE3P-6  
12:50  **A Wideband Phase Modulation Technique Adopting Fractional-N Direct Digital Frequency Synthesizer**  
(*Bohai Zhang, Fei You, Renbin Tong, Songbai He*)
- PAGE 217  
WE3P-7  
12:50  **Full Duplex Prototype of OFDM on GNURadio and USRPs**  
(*Wei Zhou, Guillaume Villemaud, Tanguy Risset*)
- PAGE 220  
WE3P-8  
12:50  **Analysis and Reduction of the Impact of Thermal Noise on the Full-Duplex OFDM Radio**  
(*Zhaowu Zhan, Guillaume Villemaud, Jean-Marie Gorce*)
- PAGE 223  
WE3P-9  
12:50  **Development of a Wide-Band Modem for a 21-GHz Band Satellite Broadcasting System**  
(*Yoshifumi Matsusaki, Masafumi Nagasaka, Yoichi Suzuki, Susumu Nakazawa, Masashi Kamei, Akinori Hashimoto, Takeshi Kimura, Shoji Tanaka, Tetsuomi Ikeda*)






- PAGE 226  
WE3P-10  
12:50  **A Dual Six-Port with Two-Angle Resolution and Compact Size for Mobile Terminals**  
(*Rifaqat Hussain, Mohammad S. Sharawi*)
- PAGE 229  
WE3P-11  
12:50  **Energy Harvesting with a Low-Cost and High Efficiency Rectenna for Low-Power Input**  
(*Stylianos D. Assimonis, Aggelos Bletsas*)
- PAGE 232  
WE3P-12  
12:50  **Using OFDM Pilot Tones for Spectrum Sensing with Applications to Mobile WiMAX**  
(*Ahmed Temtam, Dimitrie C. Popescu*)
- PAGE 235  
WE3P-13  
12:50  **Dielectric Load in Short Standard Conical Horns for Satellite Applications**  
(*Mario Reyes-Ayala, Hildeberto Jardon-Aguilar*)
- PAGE 238  
WE3P-14  
12:50  **GPU Accelerated Channel Modeling Ray Tracing Tool**  
(*A.S. Abdellatif, Safieddin Safavi-Naeini*)
- PAGE 241  
WE3P-15  
12:50  **Towards Low Power Consumption MMIC UWB Localization System**  
(*Essam Elkhoully, Michael Kuhn, Dayang Lin, Aly E. Fathy*)
- PAGE 244  
WE3P-16  
12:50  **Enhancing Open Loop Beamsteering Performance for the Uplink of UMTS/HSPA+ Under Discontinuous Transmission**  
(*Simon Schroeter, Steffen Riess, Robert Weigel, Georg Fischer*)
- PAGE 247  
WE3P-17  
12:50  **A Dynamic Power Allocation and Relay Selection Scheme for Energy-Harvesting Wireless Networks**  
(*Guobing Li, Shihua Zhu, Pinyi Ren, Hui Hui*)
- PAGE 250  
WE3P-19  
12:50  **Performance Characteristics of a Signal Detection Scheme and its Estimation Method Applicable to M-to-M Communication System**  
(*Kanshiro Kashiki, I-Te Lin, Tomoki Sada, Toshihiko Komine, Shingo Watanabe*)
- PAGE 253  
WE3P-20  
12:50  **Electrothermal Modeling of PIN Diode Protection Circuits in MRI Surface Coils**  
(*Robert H. Caverly*)
- 

## WE4B: Wireless System Architecture and Modeling

Chair: TBA

Venue: Grand Pacific Ballroom A/B, 15:40 - 17:20, Wednesday 22 January 2014

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- PAGE 256  
WE4B-1  
15:40  **Wake-Up Radio Architecture for Home Wireless Networks**  
(*Florin Hutu, Aissa Khoumeri, Guillaume Villemaud, Jean-Marie Gorce*)
- PAGE 259  
WE4B-2  
16:00  **Exploiting Hidden Markov Models in Identifying Passive UHF RFID Tags**  
(*Baha' A. Alsaify, Dale R. Thompson, Jia Di*)
- PAGE 262  
WE4B-3  
16:20  **Protocol Analysis of Signal Detection for Deriving Minimum Isolation Distance for Frequency Recycling Under WLAN**  
(*Masayuki Goto, Osamu Takyu, Takeo Fujii, Fumihito Sasamori, Shiro Handa*)
- PAGE 265  
WE4B-4  
16:40  **Data-Dependent Transmitter Fingerprints for Radio Authentication**  
(*Attiya Mahmood, Michael A. Jensen*)
- PAGE 268  
WE4B-5  
17:00  **Energy Consumptions Analysis for a Class of Symmetric Encryption Algorithm**  
(*Walid Y. Zibideh, Mustafa M. Matalgah*)

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## WE4D: Digital Signal Processing as Applied to Wireless

Chair: TBA

Venue: Cardiff, 15:40 - 17:20, Wednesday 22 January 2014

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PAGE 271  
WE4D-1  
15:40



### **Indoor Localization Based on Feed-Forward Neural Networks and CIR Fingerprinting Techniques**

*(Raida Zouari, Rafik Zayani, Ridha Bouallegue)*

PAGE 274  
WE4D-2  
16:00



### **A New Efficient Approach for Modeling the Ultra Wide Band Systems. Applications for Links Involving Wireless Digital Communications**

*(Robinson G. Caputo, Gustavo V. Figueiredo, Mauricio Silveira)*

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### **Effect of Different Platforms on Coupling Compensation Matrices in AOA Estimation Algorithms Using Small Size UCA**

*(T.S. Ghazaany, S. Zhu, S.M.R. Jones, R.A. Alhameed, J.M. Noras, T. Van Buren, S. Marker)*

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### **Digital Correlation Receiver for Location Accuracy Improvement in Pulsed Ultra Wide-Band Localization System**

*(Ali Kheirdoost, Gholamreza Moradi, Essam Elkhoully, Aly E. Fathy)*

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### **Streamlined MIMO Cross-Over Digital Predistortion**

*(M.V. Amiri, M. Helaoui, Fadhel M. Ghannouchi)*