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RFIC Plenary

Chair: Albert Wang, University of California, Riverside

Co-Chairs: Kevin Kobayashi, Qorvo and Walid Ali-Ahmad, Qualcomm

Yerba Buena Ballroom, Marriott Salons 7-8, Time 17:30 – 19:00, Sunday, 22 May 2016

17:30	Welcome Message from General Chair and TPC Chairs, Student Paper Awards, Industry Best Paper Award, Tina Quach Service Award
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PAGE 2 PLENARY-2 18:30	RFIC Under Big Digital Semiconductor Companies: Challenges and Opportunities <i>K. Lawrence Loh, MediaTek, USA</i> 

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RMO1A: Advanced Passive, Switch and Active Device Modeling

Chair: Francois Rivet, University of Bordeaux — Co-Chair: Vipul Jain, Anokiwave

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Xiang Yi¹, Kaituo Yang¹, Zhipeng Liang¹, Bei Liu¹, Khanna Devrishi¹, Chirn Chye Boon¹, Chenyang Li¹, Guangyin Feng¹, Dror Regev², Shimi Shilo², Fanyi Meng¹, Hang Liu¹, Junyi Sun¹, Gengen Hu³, Yannan Miao³

¹Nanyang Technological University, Singapore  ; ²Huawei, Israel  ; ³Huawei, China 

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David J. McLaurin, Kevin G. Gard, Richard P. Schubert, Robert Glenn, David Alldred, Trevor C. Caldwell, Zhao Li, Steve Bal, Christopher Angell, Jianxun Fan, Manish J. Manglani, Brian Reggiannini, John Kornblum, Lu Wu, Chris Mayer, Oliver E. Gysel, Wei An, Shipra Bhal, Bruce E. Wilcox, Tony Montalvo, Analog Devices, USA 

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Dang Liu, Xiaofeng Liu, Woogeun Rhee, Zhihua Wang, Tsinghua University, China 

RMO1C continued ...

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Youngmin Kim, Pilsung Jang, Junghwan Han, Heeseon Shin, Suseob Ahn, Daehyun Kwon, Jaewon Choi, Sanghoon Kang, Seungchan Heo, Thomas Byunghak Cho, Samsung, Korea 

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RMO2C: High-Performance Fractional-N Frequency Synthesizers

Chair: Stefano Pellerano, Intel — Co-Chair: Xiang Gao, Marvell Semiconductor

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Chair: Domine Leenaerts, NXP Semiconductors — Co-Chair: Danilo Manstretta, University of Pavia

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RMO3C: Millimeter-Wave and THz Signal Sources

Chair: Ehsan Afshari, Cornell University — Co-Chair: Ping Gui, Southern Methodist University

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RMO3D: Mixed-Signal Power Amplifiers

Chair: Jeffrey Walling, University of Utah — Co-Chair: Patrick Reynaert, KU Leuven

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Chair: Gernot Hueber, NXP Semiconductors — Co-Chair: Yao-Hong Liu, imec

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RMO4B: Interferer Resilient Receivers

Chair: Oren Eliezer, University of Texas at Dallas — Co-Chair: Tim LaRocca, Northrop Grumman

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RMO4D: Wideband Power Amplifiers

Chair: Margaret Szymanowski, NXP Semiconductors — Co-Chair: Donald Lie, Texas Tech University

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Chair: Hossein Hashemi, University of Southern California — Co-Chair: Eric Klumperink, University of Twente

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<i>Neha Sinha¹, Mansour Rachid², Sudhakar Pamarti¹</i>
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RTU1A-4
09:00 | A Mixer Frontend for a Four-Channel Modulated Wideband Converter with 62dB Blocker Rejection
<i>Douglas Adams¹, Yonina Eldar², Boris Murmann¹</i>
¹ Stanford University, USA  ; ² Technion, Israel  |

RTU1C: Millimeter-Wave Systems and Components for W-Band and Above

Chair: Pierre Busson, STMicroelectronics — Co-Chair: Amin Arbabian, Stanford University

Marriott Salons 10-12, Time 08:00 – 09:40, Tuesday, 24 May 2016

- | | |
|------------------------------|--|
| PAGE 290
RTU1C-1
08:00 | A Low-Power SiGe BiCMOS 190GHz Receiver with 47dB Conversion Gain and 11dB Noise Figure for Ultra-Large-Bandwidth Applications
<i>David Fritsche, Gregor Tretter, Christoph Tzschoppe, Corrado Carta, Frank Ellinger, Technische Universität Dresden, Germany</i>  |
| PAGE 294
RTU1C-2
08:20 | A 94GHz 4TX-4RX Phased-Array for FMCW Radar with Integrated LO and Flip-Chip Antenna Package
<i>Andrew Townley¹, Paul Swirhun¹, Diane Titz², Aimeric Bisognin³, Frédéric Giancesello³, Romain Pilard³, Cyril Luxey², Ali Niknejad¹</i>
¹ University of California, Berkeley, USA  ; ² Université Nice Sophia Antipolis, France  ; ³ STMicroelectronics, France  |
| PAGE 298
RTU1C-3
08:40 | 225–280GHz Receiver for Rotational Spectroscopy
<i>Q. Zhong¹, Wooyeol Choi¹, Navneet Sharma¹, Zeshan Ahmad¹, J.P. McMillan², C.F. Neese², F.C. De Lucia², Kenneth K. O¹</i>
¹ University of Texas at Dallas, USA  ; ² Ohio State University, USA  |
| PAGE 302
RTU1C-4
09:00 | A 165–230GHz SiGe Amplifier-Doubler Chain with 5dBm Peak Output Power
<i>Sriram Muralidharan¹, Keifei Wu², Mona Hella²</i>
¹ Analog Devices, USA  ; ² Rensselaer Polytechnic Institute, USA  |
| PAGE 306
RTU1C-5
09:20 | 75–105GHz Switching Power Amplifiers Using High-Breakdown, High-f_{max} Multi-Port Stacked Transistor Topologies
<i>Kunal Datta, Hossein Hashemi, University of Southern California, USA</i>  |

RTU1D: Advanced PA Design Techniques

Chair: Ranjit Gharpurey, University of Texas at Austin — Co-Chair: Leon van den Oever, Radiosemi

Marriott Salons 13-15, Time 08:00 - 09:40, Tuesday, 24 May 2016

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RTU1D-1
08:00 **A Highly Efficient WLAN CMOS PA with Two-Winding and Single-Winding Combined Transformer**
Hyunjin Ahn, Seungjun Baek, Hyunsik Ryu, Ilku Nam, Ockgoo Lee, Pusan National University, Korea 
- PAGE 314
RTU1D-2
08:20 **A Fully Integrated Flip-Chip SiGe BiCMOS Power Amplifier for 802.11ac Applications**
Apostolos Samelis, Edward Whittaker, Michael Ball, Alasdair Bruce, John Nisbet, Lui Lam, Craig Christmas, William Vaillancourt, Skyworks Solutions, UK 
- PAGE 318
RTU1D-3
08:40 **A 20dBm Configurable Linear CMOS RF Power Amplifier for Multi-Standard Transmitters**
Eli Schwartz, Sergey Anderson, Alex Mostov, Ilya Sima, Udi Suissa, Ron Pongratz, Amit Ezer, Avi Cohen, Michael Gulko, Nadav Snir, Asaf Elazari, Avi Bauer, DSP Group, Israel 
- PAGE 322
RTU1D-4
09:00 **Single Die Broadband CMOS Power Amplifier and Tracker with 37% Overall Efficiency for TDD/FDD LTE Applications**
Florinel Balteanu, Skyworks Solutions, USA 
- PAGE 324
RTU1D-5
09:20 **A 1-Watt Ku-Band Power Amplifier in SiGe with 37.5% PAE**
Ying Chen, Mark P. van der Heijden, Domine M.W. Leenaerts, NXP Semiconductors, The Netherlands 

RTU2A: Innovative Reconfigurable Transceiver Architectures

Chair: Ramesh Harjani, University of Minnesota — Co-Chair: Vito Giannini, Texas Instruments

Marriott Salons 1-3, Time 10:10 - 11:50, Tuesday, 24 May 2016

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RTU2A-1
10:10 **A 30-MHz-to-3-GHz CMOS Array Receiver with Frequency and Spatial Interference Filtering for Adaptive Antenna Systems**
Naoki Oshima, Masaki Kitsunezuka, Kenta Tsukamoto, Kazuaki Kunihiro, NEC, Japan 
- PAGE 330
RTU2A-2
10:30 **A Wideband Single-PLL RF Receiver for Simultaneous Multi-Band and Multi-Channel Digital Car Radio Reception**
Jan van Sinderen¹, Lucien Breems¹, Hans Brekelmans¹, Frank Leong¹, Nenad Pavlovic¹, Robert Rutten¹, Jan Niehof¹, Raf Roovers¹, Bernard Burdick², Jochen Rudolph², Ulrich Moehlmann², Peter Blinzer², Manfred Biehl², Niels Gabriel², Andreas Wichern², Gerd Schippmann², Frank Rethmeier², Janusz Klimczak², Joerg Wenzel², Ralf-Gero Pilaski²
¹NXP Semiconductors, The Netherlands  ; ²NXP Semiconductors, Germany 
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RTU2A-3
10:50 **A Fully Integrated Software-Defined FDD Transceiver Tunable from 0.3-to-1.6GHz**
Dong Yang¹, Hazal Yüksel², Christopher Newman², Changhyuk Lee³, Zachariah Boynton², Noman Paya⁴, Miles Pedrone⁵, Alyssa Apsel², Alyosha Molnar²
¹Broadcom, USA  ; ²Cornell University, USA  ; ³Columbia University, USA  ; ⁴Texas Instruments, USA  ; ⁵IBM, USA 
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RTU2A-4
11:10 **A 200MSPS Reconfigurable ADC with Adjacent Channel Narrowband Blocker Resiliency**
Sushil Subramanian, Hossein Hashemi, University of Southern California, USA 

RTU2C: 5G Millimeter-Wave Components and Integrated Systems

Chair: Ed Balboni, Analog Devices — Co-Chair: Mona Hella, Rensselaer Polytechnic Institute

Marriott Salons 10-12, Time 10:10 - 11:50, Tuesday, 24 May 2016

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RTU2C-1
10:10

A 60GHz Packaged Switched Beam 32nm CMOS TRX with Broad Spatial Coverage, 17.1dBm Peak EIRP, 6.1dB NF at <250mW

B. Sadhu, Alberto Valdes-Garcia, J.-O. Plouchart, H. Ainspan, A.K. Gupta, M. Ferriss, M. Yeck, M. Sanduleanu, X. Gu, C. Baks, D. Liu, D. Friedman, IBM, USA 

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RTU2C-2
10:30

20-30GHz Mixer-First Receiver in 45-nm SOI CMOS

Charley Wilson III, Brian A. Floyd, North Carolina State University, USA 

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RTU2C-3
10:50

A 42mW 26-28GHz Phased-Array Receive Channel with 12dB Gain, 4dB NF and 0dBm IIP3 in 45nm CMOS SOI

Umut Kodak, Gabriel M. Rebeiz, University of California, San Diego, USA 

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RTU2C-4
11:10

A 28-GHz 4-Channel Dual-Vector Receiver Phased Array in SiGe BiCMOS Technology

Yi-Shin Yeh¹, Benjamin Walker², Ed Balboni², Brian A. Floyd¹

¹North Carolina State University, USA ; ²Analog Devices, USA 

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RTU2C-5
11:30

A Ka-Band Digitally-Controlled Phase Shifter with Sub-Degree Phase Precision

Yahya Tousei, Alberto Valdes-Garcia, IBM, USA 