

# RFIC TECHNICAL SESSIONS

08:00–09:40 | Tuesday, 6 June 2017

Hawai'i Convention Center



## Room 312

## Room 313A

## Room 313B

	Room 312	Room 313A	Room 313B
	<p><b>RTU1A: RF Front-End Building Blocks</b> Gary Zhang, <i>Guangdong University of Technology</i> Bodhisatwa Sadhu, <i>IBM T.J. Watson Research Center</i></p>	<p><b>RTU1B: Advanced Millimeter-Wave Circuit Techniques</b> Hua Wang, <i>Georgia Institute of Technology</i> Pierre Busson, <i>STMicroelectronics</i></p>	<p><b>RTU1D: Reconfigurable Multi-Mode PAs</b> Patrick Reynaert, <i>Katholieke Universiteit Leuven</i> Gary Hau, <i>Qualcomm</i></p>
08:00-8:20	<p><b>RTU1A-1: A Bi-Directional, X-Band 6-Bit Phase Shifter for Phased Array Antennas Using an Active DPDT Switch</b> Yunyi Gong, Moon-Kyu Cho, John D. Cressler, <i>Georgia Institute of Technology, USA</i></p>	<p><b>RTU1B-1: An 80–106GHz CMOS Amplifier with 0.5V Supply Voltage</b> K. Katayama<sup>1</sup>, S. Amakawa<sup>1</sup>, K. Takano<sup>1</sup>, T. Yoshida<sup>1</sup>, M. Fujishima<sup>1</sup>, K. Hisamitsu<sup>1</sup>, H. Takatsuka<sup>2</sup>; <sup>1</sup><i>Hiroshima University, Japan</i>, <sup>2</sup><i>Mie Fujitsu Semiconductor, Japan</i></p>	<p><b>RTU1D-1: A Digital mm-Wave PA Architecture with Simultaneous Frequency and Back-Off Reconfigurability</b> Chandrakanth R. Chappidi, Xue Wu, Kaushik Sengupta; <i>Princeton University, USA</i></p>
08:20-8:40	<p><b>RTU1A-2: Low Power Highly Linear Band-Pass/Band-Stop Filter for 2–4GHz with Less than 1% of Fractional Bandwidth in 0.13µm CMOS Technology</b> Laya Mohammadi, Kwang-Jin Koh; <i>Virginia Tech, USA</i></p>	<p><b>RTU1B-2: A 77-GHz Active Millimeter-Wave Reflector for FMCW Radar</b> M. Sadegh Dadash<sup>1</sup>, Juergen Hasch<sup>2</sup>, Sorin P. Voinescu<sup>1</sup>; <sup>1</sup><i>University of Toronto, Canada</i>, <sup>2</sup><i>Robert Bosch, Germany</i></p>	<p><b>RTU1D-2: A Digitally-Tuned Triple-Band Transformer Power Combiner for CMOS Power Amplifiers</b> Rahul Singh, Jeyanandh Paramesh; <i>Carnegie Mellon University, USA</i></p>
08:40-9:00	<p><b>RTU1A-3: A Feedforward Linearization Technique Implemented in IF Band for Active Down-Conversion Mixers</b> Hao Li<sup>1</sup>, Xiao Yang<sup>2</sup>, Carlos E. Saavedra<sup>1</sup>; <sup>1</sup><i>Queen's University, Canada</i>, <sup>2</sup><i>Huaqiao University, China</i></p>	<p><b>RTU1B-3: A High-Performance Slow-Wave CPW with ESD Protection for Ultraflat Band Millimeter-Wave Applications</b> Wei Gao<sup>1</sup>, Handoko Linewih<sup>1</sup>, Suh-Fei Lim<sup>1</sup>, Jian-Hsing Lee<sup>2</sup>, Sern-Ee Leang<sup>1</sup>; <sup>1</sup><i>GLOBALFOUNDRIES, Singapore</i>, <sup>2</sup><i>GLOBALFOUNDRIES, USA</i></p>	<p><b>RTU1D-3: A Split-Array, C-2C Switched-Capacitor Power Amplifier in 65nm CMOS</b> Zhidong Bai, Wen Yuan, Ali Azam, Jeffrey S. Walling; <i>University of Utah, USA</i></p>
09:00-9:20	<p><b>RTU1A-4: A 1–30GHz 3-Bit Vector Modulator Based on Ultra-Wideband IQ-Generation for MIMO-Radar-Systems in SiGe BiCMOS</b> Benedikt Welp<sup>1</sup>, Askold Meusling<sup>2</sup>, Klaus Aufferinger<sup>3</sup>, Nils Pohl<sup>4</sup>; <sup>1</sup><i>Fraunhofer FHR, Germany</i>, <sup>2</sup><i>Airbus Defence &amp; Space, Germany</i>, <sup>3</sup><i>Infiniteon Technologies, Germany</i>, <sup>4</sup><i>Ruhr-Universität Bochum, Germany</i></p>	<p><b>RTU1B-4: Circuit Building Blocks for Efficient In-Antenna Power Combining at 240GHz with non-50 Ohm Amplifier Matching Impedance</b> Christian v. Vangerow<sup>1</sup>, Benjamin Goettel<sup>1</sup>, Herman Jalli Ng<sup>2</sup>, Dietmar Kissinger<sup>2</sup>, Thomas Zwick<sup>1</sup>; <sup>1</sup><i>KIT, Germany</i>, <sup>2</sup><i>IHP, Germany</i></p>	<p><b>RTU1D-4: A 20dBm Outphasing Class E PA with High Efficiency at Power Back-Off in 65nm CMOS Technology</b> Ali Ghahremani, Anne-Johan Annema, Bram Nauta; <i>University of Twente, The Netherlands</i></p>
09:20-9:40	<p><b>RTU1A-5: A 0.05–6GHz Voltage-Mode Harmonic Rejection Mixer with up to 30dBm In-Band IIP3 and 35dBc HRR in 32nm SOI CMOS</b> Kerim Kibaroglu, Gabriel M. Rebeiz; <i>University of California, San Diego, USA</i></p>	<p><b>RTU1B-5: A 27.9–53.5-GHz Transformer-Based Injection-Locked Frequency Divider with 62.9% Locking Range</b> Jingzhi Zhang, Huihua Liu, Yunqiu Wu, Chenxi Zhao, Kai Kang; <i>UESTC, China</i></p>	<p><b>RTU1D-5: An S/X-Band CMOS Power Amplifier Using a Transformer-Based Reconfigurable Output Matching Network</b> Jaeyong Ko<sup>1</sup>, Sungho Lee<sup>2</sup>, Sangwook Nam<sup>1</sup>; <sup>1</sup><i>Seoul National University, Korea</i>, <sup>2</sup><i>KETI, Korea</i></p>

TUESDAY

# RFIC TECHNICAL SESSIONS

10:00–11:40 | Tuesday, 6 June 2017  
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## Room 312

## Room 313A

## Room 313B

	Room 312	Room 313A	Room 313B
	<b>RTU2A: Full-Duplex, Interference-Resilient and Harmonic-Rejection Receivers</b> Renaldi Winoto, <i>Marvell Semiconductor</i> Raja Pullela, <i>MaxLinear</i>	<b>RTU2B: System-on-Chip for Millimeter-Wave and Above</b> Vito Giannini, <i>UHDR</i> Tim LaRocca, <i>Northrop Grumman Aerospace Systems</i>	<b>RTU2D: Power Amplifiers in Advanced Technologies</b> Margaret Szymanowski, <i>NXP Semiconductors</i> Nick Cheng, <i>Skyworks Solutions</i>
10:00–10:20	<b>RTU2A-1: Low Power Wideband Receiver with RF Self-Interference Cancellation for Full-Duplex and FDD Wireless Diversity</b> E. Kargaran, S. Tijani, G. Pini, D. Manstretta, R. Castello; <i>Università di Pavia, Italy</i>	<b>RTU2B-1: Highly-Miniaturized 2-Channel mm-Wave Radar Sensor with On-Chip Folded Dipole Antennas</b> Herman Jalli Ng <sup>1</sup> , Wael Ahmad <sup>1</sup> , Maciej Kucharski <sup>1</sup> , Jeng-Hau Lu <sup>2</sup> , Dietmar Kissinger <sup>1</sup> ; <sup>1</sup> <i>IHP, Germany</i> , <sup>2</sup> <i>National Chiao Tung University, Taiwan</i>	<b>RTU2D-1: Peaking PA Bias Circuit for an APT CMOS Doherty PA</b> Joonhoi Hur, Paul Draxler, Jeong-won Park, Anthony Segoria, Vladimir Aparin; <i>Qualcomm, USA</i>
10:20–10:40	<b>RTU2A-2: An FD/FDD Transceiver with RX Band Thermal, Quantization, and Phase Noise Rejection and &gt;64dB TX Signal Cancellation</b> Sameet Ramakrishnan, Lucas Calderin, Ali Niknejad, Borivoje Nikolic; <i>University of California, Berkeley, USA</i>	<b>RTU2B-2: Fully-Scalable 2D THz Radiating Array: A 42-Element Source in 130-nm SiGe with 80-μW Total Radiated Power at 1.01THz</b> Zhi Hu, Ruonan Han; <i>MIT, USA</i>	<b>RTU2D-2: An X-Band Inverse Class-F SiGe HBT Cascode Power Amplifier with Harmonic-Tuned Output Transformer</b> Inchan Ju, John D. Cressler; <i>Georgia Institute of Technology, USA</i>
10:40–11:00	<b>RTU2A-3: A CMOS UWB Receiver with Reconfigurable Notch Filters for Narrow-Band Interferers</b> Paria Sepidband, Kamran Entesari; <i>Texas A&amp;M University, USA</i>	<b>RTU2B-3: A Wideband SiGe BiCMOS Transceiver Chip-Set for High-Performance Microwave Links in the 5.6–43.5GHz Range</b> Y. Baeyens <sup>1</sup> , S. Shahramian <sup>1</sup> , B. Jalali <sup>1</sup> , P. Roux <sup>1</sup> , J. Weiner <sup>1</sup> , A. Singh <sup>1</sup> , M. Moretto <sup>2</sup> , P. Boutet <sup>2</sup> , P. Lopez <sup>2</sup> ; <sup>1</sup> <i>Nokia Bell Labs, USA</i> , <sup>2</sup> <i>Nokia, France</i>	<b>RTU2D-3: A 6–18GHz GaN Distributed Power Amplifier Using Reactive Matching Technique and Simplified Bias Network</b> Hongjong Park <sup>1</sup> , Sangho Lee <sup>1</sup> , Kwangseok Choi <sup>1</sup> , Jihoon Kim <sup>1</sup> , Hyosung Nam <sup>2</sup> , Jaeduk Kim <sup>3</sup> , Wangyong Lee <sup>3</sup> , Changhoon Lee <sup>4</sup> , Jung Hyun Kim <sup>2</sup> , Youngwoo Kwon <sup>1</sup> ; <sup>1</sup> <i>Seoul National University, Korea</i> , <sup>2</sup> <i>Hanyang University, Korea</i> , <sup>3</sup> <i>LIG Nex1, Korea</i> , <sup>4</sup> <i>ADD, Korea</i>
11:00–11:20	<b>RTU2A-4: A Full-Duplex Receiver with 80MHz Bandwidth Self-Interference Cancellation Circuit Using Baseband Hilbert Transform Equalization</b> A. El Sayed <sup>1</sup> , A. Ahmed <sup>1</sup> , A.K. Mishra <sup>1</sup> , A.H.M. Shirazi <sup>1</sup> , S.-P. Woo <sup>1</sup> , Y.-S. Choi <sup>2</sup> , Shahriar Mirabbasi <sup>1</sup> , S. Shekhar <sup>1</sup> ; <sup>1</sup> <i>University of British Columbia, Canada</i> , <sup>2</sup> <i>Intel, USA</i>	<b>RTU2B-4: A Fully-Integrated 94-GHz 32-Element Phased-Array Receiver in SiGe BiCMOS</b> Jean-Olivier Plouchart <sup>1</sup> , Wooram Lee <sup>1</sup> , Caglar Ozdag <sup>2</sup> , Yigit Aydogan <sup>2</sup> , Mark Yeck <sup>1</sup> , Alper Cabuk <sup>2</sup> , Asim Kepkep <sup>2</sup> , Emre Apaydin <sup>2</sup> , Alberto Valdes-Garcia <sup>1</sup> ; <i>IBM T.J. Watson Research Center, USA</i> , <sup>2</sup> <i>MKR-IC, Turkey</i> , <sup>3</sup> <i>ASELSAN, Turkey</i>	<b>RTU2D-4: A Ka-Band Asymmetrical Stacked-FET MMIC Doherty Power Amplifier</b> Duy P. Nguyen, Thanh Pham, Anh-Vu Pham; <i>University of California, Davis, USA</i>
11:20–11:40	<b>RTU2A-5: A Wideband Receiver Employing PWM-Based Harmonic Rejection Downconversion</b> Heechai Kang, Wei-Gi Ho, Vineet Singh, Ranjit Gharpurey; <i>University of Texas at Austin, USA</i>	<b>RTU2B-5: A 71–86GHz Bidirectional Image Selection Transceiver Architecture</b> Najme Ebrahimi, James F. Buckwalter; <i>University of California, San Diego, USA</i>	<b>RTU2D-5: A 73GHz PA for 5G Phased Arrays in 14nm FinFET CMOS</b> Steven Callender, Stefano Pellerano, Christopher Hull; <i>Intel, USA</i>

Joint RFIC/IMS Panel Session: Who Wants to be a Millimeterwavionire? Starting at 11:45 in Room 316C (see p. 15 for details)