

TECHNICAL SESSIONS

08:00–09:40 | Thursday, 8 June 2017 | Hawai'i Convention Center



	Room: 312	Room: 313A	Room: 313B	Room: 313C
	TH1A: Advanced Network and Materials Analysis Topics Chair: Andrea Ferrero, <i>Keysight Technologies</i> Co-Chair: Jon Martens, <i>Anritsu</i>	TH1B: Advanced Passive Components Chair: Kamal Samanta, <i>Sony Corp.</i> Co-Chair: Guoan Wang, <i>University of South Carolina</i>	TH1C: MEMS Components and Technologies Chair: Joachim Oberhammer, <i>Royal Institute of Technology</i> Co-Chair: Venkata Chivukula, <i>Bosch Research</i>	TH1D: Nathan Sokal and the Class-E Amplifier Chair: Frederick Raab, <i>Green Mountain Radio Research LLC.</i> Co-Chair: Andrey Grebennikov, <i>Sumitomo Electric Europe</i>
08:00-08:20	TH1A-1: Enhanced Vector Network Analyzer Time Domain Measurement Using Normalized Superimposition Stephen Pennock; <i>University of Bath</i> ; Omar Abdul-Latif; <i>Rochester Institute of Technology - Dubai</i>	TH1B-1: Joint Feeding Network for Mode Composite Waveguide Jiapin Guo; <i>École Polytechnique de Montréal</i> ; Ke Wu; <i>École Polytechnique de Montréal</i>	TH1C-1: A 19–40 GHz Bi-Directional MEMS Tunable All Silicon Evanescent-Mode Cavity Filter ZhengAn Yang; <i>Purdue University</i> ; Dimitrios Peroullis; <i>Purdue University</i>	TH1D-1: Recollections of Nathan Sokal Frederick Raab; <i>Green Mountain Radio Research</i>
08:20-08:40	TH1A-2: A 0.01–26 GHz Single-Chip SiGe Reflectometer for Two-Port Vector Network Analyzers Hunchul Chung; <i>University of California at San Diego</i> ; Qian Ma; <i>University of California at San Diego</i> ; Mustafa Sayginer; <i>University of California at San Diego</i> ; Gabriel Rebeiz; <i>University of California at San Diego</i>	TH1B-2: A 30–60 GHz SiGe Transformer Balun With Offset Radii Coils for Low Amplitude and Phase Imbalance Suddipta Chakraborty; <i>Macquarie University</i> ; Leigh Milner; <i>DSTG</i> ; Leonard Hall; <i>DSTG</i> ; Anthony Parker; <i>Macquarie University</i> ; Michael Heimlich; <i>Macquarie University</i>	TH1C-2: 3D Micro-Fabricated High-Q 140 GHz Filter Francois David; <i>Xlim - CNRS - Université De Lioges</i> ; Claire Dalmay; <i>Xlim - CNRS - Université De Lioges</i> ; Matthieu Chatras; <i>Xlim - CNRS - Université De Lioges</i> ; Arnaud Pothier; <i>Xlim - CNRS - Université De Lioges</i> ; Ludovic Carpentier; <i>CNES French Space Agency</i> ; Luc Lapiere; <i>CNES French Space Agency</i> ; Pierre Blondy; <i>Xlim - CNRS - Université De Lioges</i>	TH1D-2: Early History of Switching-Mode Class-E Techniques for High-Efficiency Power Amplification Andrei Grebennikov; <i>Sumitomo Electric Europe</i>
08:40-09:00	TH1A-3: Elliptical Alignment Holes Enabling Accurate Direct Assembly of Microchips to Standard Waveguide Flanges at Sub-THz Frequencies James Campion; <i>KTH Royal Institute of Technology</i> ; Umer Shah; <i>KTH Royal Institute of Technology</i> ; Joachim Oberhammer; <i>KTH Royal Institute of Technology</i>	TH1B-3: A 60-GHz Six-Pole Quasi-Elliptic Bandpass Filter With Novel Feeding Mechanisms Based on Silica-Based Post-Wall Waveguide Yusuke Uemichi; <i>Fujikura Ltd.</i> ; Osamu Nukaga; <i>Fujikura Ltd.</i> ; Kei Nakamura; <i>Fujikura Ltd.</i> ; Yuta Hasegawa; <i>Fujikura Ltd.</i> ; Xu Han; <i>Fujikura Ltd.</i> ; Ryouhei Hosono; <i>Fujikura Ltd.</i> ; Kiyoshi Kobayashi; <i>Fujikura Ltd.</i> ; Ning Guan; <i>Fujikura Ltd.</i>	TH1C-3: High Resolution MEMS-Based Switched Delay Lines Farzad Yazdani; <i>University of Waterloo</i> ; Raafat Mansour; <i>University of Waterloo</i>	TH1D-3: Class-E Amplifiers and Applications at MF, HF, and VHF Arturo Mediano; <i>University of Zaragoza</i> ; Francisco Ortega; <i>Universidad Politécnica de Madrid</i>
09:00-09:20	TH1A-4: All Liquid Based Calibration Scheme for Microwave Dielectrometry Sönke Schmidt; <i>Technische Universität Darmstadt</i> ; Martin Schuessler; <i>Technische Universität Darmstadt</i> ; Rolf Jakoby; <i>Technische Universität Darmstadt</i>	TH1B-4: Lumped Element Balun With Inherent Complex Impedance Transformation Markus Frank; <i>Sato Techno Lab Europe</i> ; Mattias Thorsell; <i>Chalmers University of Technology</i> ; Peter Enoksson; <i>Chalmers University of Technology</i>	TH1C-4: Very-Low Phase Noise RF-MEMS Reference Oscillator Using AlN-on-Si Resonators Achieved by Accurate Co-Simulation Johannes Stegner; <i>Technische Universität Ilmenau</i> ; Uwe Stehr; <i>Technische Universität Ilmenau</i> ; Matthias Hein; <i>Technische Universität Ilmenau</i> ; Cheng Tu; <i>City University of Hong Kong</i> ; Joshua Lee; <i>City University of Hong Kong</i>	TH1D-4: Microwave Class-E Power Amplifiers Zoya Popovic; <i>University of Colorado</i> ; Jose A. Garcia; <i>University of Cantabria</i>
09:20-09:40	TH1A-5: Non-Contact PIM Measurement of Dielectric Wave Absorbers by Using a Metallic Resonator Shinji Ishiyama; <i>Yokohama National University</i> ; Nobuhiro Kuga; <i>Yokohama National University</i>	TH1B-5: Design of Dual-Band -90 Degree/+90 Degree Transmission Lines for Miniaturized Dual-Band 1:4 Rat-Race Couplers Chih-Chun Chang; <i>Chang Gung University</i> ; Yen-Hsiu Wei; <i>Chang Gung University</i> ; Kuo-Sheng Chin; <i>Chang Gung University</i>	TH1C-5: A 150 MHz Voltage Controlled Oscillator Using Lithium Niobate RF-MEMS Resonator Ali Kourani; <i>University of Illinois at Urbana-Champaign</i> ; Yongha Song; <i>University of Illinois at Urbana-Champaign</i> ; Brandon Arakawa; <i>University of Illinois at Urbana-Champaign</i> ; Ruochen Lu; <i>University of Illinois at Urbana-Champaign</i> ; Junfeng Guan; <i>University of Illinois at Urbana-Champaign</i> ; Anming Gao; <i>University of Illinois at Urbana-Champaign</i> ; Songbin Gong; <i>University of Illinois at Urbana-Champaign</i>	TH1D-5: Class-E Rectifiers and Power Converters Jose A. Garcia; <i>University of Cantabria</i> ; Zoya Popovic; <i>University of Colorado</i>

Free NSF Workshop on the Communications, Circuits, and Sensing Systems Program is going on now in Room 311 (see p. 77 for details)

TECHNICAL SESSIONS

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Room: 314	Room: 315	Room: 316A	Room: 316B	Room: 316C	
TH1E: 5G and Beyond for the Internet of Things Chair: Thomas Us-smueller, <i>University of Innsbruck</i> Co-Chair: Jasmin Grosinger, <i>Graz University of Technology</i>	TH1F: Sub-Millimeter Wave Signal Generation Techniques Chair: Ajay Poddar, <i>Synergy Microwave</i> Co-Chair: Danny Elad, <i>IBM Research - Haifa</i>	TH1G: Advanced Wireless Sensors Chair: Nils Pohl, <i>Ruhr University Bochum</i> Co-Chair: Lora Schulwitz, <i>MDA Information Systems</i>	TH1H: Advanced Biomedical Imaging Techniques Chair: Robert Caverly, <i>Villanova University</i> Co-Chair: Natalia Nikolova, <i>McMaster University</i>	TH1I: Advanced Radar Integrated Circuits and Applications Chair: Arne Jacob, <i>Technical University of Hamburg</i> Co-Chair: Chris Rodenbeck, <i>Naval Research Laboratory</i>	
TH1E-1: Fast Two Dimensional Position Update System for UHF RFID Tag Tracking Lukas Görttschacher, <i>Graz University of Technology</i> ; Jasmin Grosinger, <i>Graz University of Technology</i> ; Hasan Khan, <i>Graz University of Technology</i> ; Wolfgang Bösch, <i>Graz University of Technology</i>	TH1F-1: A V-Band Low-Phase-Noise Low-Jitter Sub-Harmonically Injection-Locked QVCO With High Quadrature Accuracy in 90-nm CMOS Process Chun-Ching Chan, <i>National Central University</i> ; Gun-Lin Huan, <i>National Central University</i> ; Hong-Yeh Chang, <i>National Central University</i>	TH1G-1: Displacement Monitoring System Based on a Quadrature Self-Injection-Locked Radar Technology Fu-Kang Wang, <i>National Sun Yat-sen University</i> ; Sheng-Chao Su, <i>National Sun Yat-sen University</i> ; Mu-Cyun Tang, <i>National Sun Yat-sen University</i> ; Ziy-Sheng Horng, <i>National Sun Yat-sen University</i>	TH1H-1: MIMO-SAR Based Millimeter-Wave Imaging for Contactless Assessment of Burned Skin Daniel Oppelt, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Julian Adametz, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Jannis Groh, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Ole Goertz, <i>Martin-Luther-Krankenhaus Berlin</i> ; Martin Vossiek, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i>	TH1I-1: A D-Band Fully-Differential Quadrature FMCW Radar Transceiver With 11 dBm Output Power and a 3-dB 30-GHz Bandwidth in SiGe BiCMOS Muhammad Furqan, <i>Johannes Kepler University of Linz</i> ; Faisal Ahmed, <i>Johannes Kepler University of Linz</i> ; Klaus Aufinger, <i>Infineon Technologies AG</i> ; Andreas Stelzer, <i>Johannes Kepler University of Linz</i>	08:00-08:20
TH1E-2: Zero-Power, Long-Range, Ultra Low-Cost Harmonic Wireless Sensors for Massively Distributed Monitoring of Cracked Walls Valentina Palazzi, <i>University of Perugia</i> ; Federico Alimenti, <i>University of Perugia</i> ; Paolo Mezzanotte, <i>University of Perugia</i> ; Giulia Orecchini, <i>University of Perugia</i> ; Luca Roselli, <i>University of Perugia</i>	TH1F-2: A 210 GHz Triple-Push Oscillator in 90 nm CMOS Cuel-Ling Hsieh, <i>National Tsing Hua University</i> ; Jenny Yi-Chun Liu, <i>National Tsing Hua University</i>	TH1G-2: Ground Penetrating Synthetic Aperture Radar Imaging Providing Soil Permittivity Estimation Christoph Baer, <i>Ruhr University Bochum</i> ; Sergio Gutierrez, <i>Universidad Nacional de Colombia</i> ; Jan Barowski, <i>Ruhr University Bochum</i> ; Jochen Jebramcik, <i>Ruhr University Bochum</i> ; Felix Vega, <i>Universidad Nacional de Colombia</i> ; Ilona Rolfes, <i>Ruhr University Bochum</i>	TH1H-2: Non-Invasive Microwave Thermometry of Multilayer Human Tissues Parisa Momenroodaki, <i>University of Colorado</i> ; William Haines, <i>University of Colorado</i> ; Zoya Popovic, <i>University of Colorado</i>	TH1I-2: A 60 GHz SiGe BiCMOS Monostatic Transceiver for Radar Applications Efe Öztürk, <i>Silicon Radar GmbH</i> ; Dieter Genschow, <i>Silicon Radar GmbH</i> ; Uroschanit Yodprasit, <i>Silicon Radar GmbH</i> ; Berk Yilmaz, <i>Silicon Radar GmbH</i> ; Dietmar Kissinger, <i>IHP Microelectronics</i> ; Wojciech Debski, <i>Silicon Radar GmbH</i> ; Wolfgang Winkler, <i>Silicon Radar GmbH</i>	08:20-08:40
TH1E-3: Ambient FM Backscattering for Smart Agricultural Monitoring Spyridon-Nektarios Daskalakis, <i>Heriot-Watt University</i> ; John Kimionis, <i>Georgia Institute of Technology</i> ; Ana Collado, <i>Heriot-Watt University</i> ; Manos Tentzeris, <i>Georgia Institute of Technology</i> ; Apostolos Georgiadis, <i>Heriot-Watt University</i>	TH1F-3: A D-Band Wide Tuning Range VCO Using Switching Transformer Yu-Teng Chang, <i>National Taiwan University</i> ; Hsin-Chia Lu, <i>National Taiwan University</i>	TH1G-3: Metamaterial Leaky Wave Antenna Enabled Efficient 3D Spectrally-Encoded Microwave Tomography Using Linear Sampling Method Mehdi Salarkaleji, <i>Wayne State University</i> ; Mohammadreza Eskandari, <i>Isfahan University of Technology</i> ; Jimmy Ching-Ming Chen, <i>Wayne State University</i> ; Chung-Tse (Michael) Wu, <i>Wayne State University</i>	TH1H-3: An Experimental Comparison Between the Born and Rytov Approximations in Microwave Tissue Imaging Daniel Tajik, <i>McMaster University</i> ; Denys Shumakov, <i>McMaster University</i> ; Natalia Nikolova, <i>McMaster University</i>	TH1I-3: Chirp-Partition Based Pre-Distortion for Reduced Carrier Leakage in Circulator-Based Wide-Band FMCW Radar Systems Adrian Tang, <i>Jet Propulsion Laboratory</i> ; Yanghyo Kim, <i>University of California, Los Angeles</i> ; Li Du, <i>University of California, Los Angeles</i> ; Theodore Reck, <i>Jet Propulsion Laboratory</i> ; Mau-Chung Chang, <i>University of California, Los Angeles</i>	08:40-09:00
TH1E-4: Enabling a Constant and Efficient Flow of Wireless Energy for IoT Sensors Daniel Belo, <i>Instituto De Telecomunicacoes</i> ; Ricardo Correia, <i>Instituto De Telecomunicacoes</i> ; Pedro Pinho, <i>Instituto De Telecomunicacoes</i> ; Nuno Carvalho, <i>Instituto De Telecomunicacoes</i>	TH1F-4: 36% Frequency-Tuning-Range Dual-Core 60 GHz Push-Push VCO in 45 nm RF-SOI CMOS Technology Johannes Rimmelpacher, <i>Universität Erlangen-Nürnberg</i> ; Robert Weigel, <i>University of Erlangen-Nuremberg</i> ; Amelie Hagelauer, <i>University of Erlangen-Nuremberg</i> ; Vadim Issakov, <i>Infineon Technologies AG</i>	TH1G-4: Proximal-Field Radiation Sensors Amirreza Safaripour, <i>California Institute of Technology</i> ; Mohammed Reza Hashemi, <i>California Institute of Technology</i> ; Ali Hajimiri, <i>California Institute of Technology</i>	TH1H-4: Automatic RF Leakage Signal Canceled in MRI Applications Sung-Min Sohn, <i>University of Minnesota, Twin Cities</i> ; Michael Garwood, <i>University of Minnesota</i> ; John Thomas Vaughan, <i>Columbia University</i>	TH1I-4: High Dynamic Range Ku-Band CMOS Transceiver IC for FMCW Radar Application Seung Hwan Jung, <i>Silicon R&D</i> ; Sang Gyun Kim, <i>Kwangwoon University</i> ; Woon Sung Choi, <i>Kwangwoon University</i> ; Hong Hee Kim, <i>LIGNEXT</i> ; Hyeoung Geol Kim, <i>LIGNEXT</i> ; Yun Seong Eo, <i>Kwangwoon University</i>	09:00-09:10
TH1E-5: Quasi-Isotropic RF Energy Harvester for Autonomous Long Distance IoT Operations Marco Fantuzzi, <i>University di Bologna</i> ; Diego Masotti, <i>University di Bologna</i> ; Alessandra Costanzo, <i>University di Bologna</i> ; Massimo Del Prete, <i>University di Bologna</i>		TH1G-5: 3D Inkjet Printed Disposable Environmental Monitoring Wireless Sensor Node Muhammad Fahad Farooqui, <i>King Abdullah University of Science and Technology</i> ; Atif Shamim, <i>King Abdullah University of Science and Technology</i>	TH1H-5: 10.5-T MRI Volume Excitation Using Traveling-Wave Microstrip Probes Patrick Bluem, <i>University of Colorado</i> ; Zoya Popovic, <i>University of Colorado</i>	TH1I-5: Linearity Improvement Method of Fast-Chirp Signal for PLL by Using Frequency Detector and Division Ratio Modification Osamu Wada, <i>Mitsubishi Electric Corporation</i> ; Hiroyuki Mizutani, <i>Mitsubishi Electric Corporation</i> ; Stefan Lindner, <i>Universität Erlangen-Nürnberg</i> ; Kenichi Tajima, <i>Mitsubishi Electric Corporation</i>	09:10-09:20
			TH1H-6: Time Domain Measurement of Electron Spin Relaxation at High Fields and Dynamic Nuclear Polarization at Sub-Millimeter Wavelengths Thierry Dubroca, <i>Florida State University</i> ; Xiaoliang Wang, <i>Florida State University</i> ; Johannes McKay, <i>Florida State University</i> ; Johan van Tol, <i>Florida State University</i>	TH1I-6: Smart Communication and Relative Localization System for Firefighters and Rescuers Fabian Lurz, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Simon Mueller, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Stefan Lindner, <i>Universität Erlangen-Nürnberg</i> ; Sarah Linz, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Markus Garrill, <i>Imosent GmbH</i> ; Robert Weigel, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ; Alexander Koelpl, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i>	09:20-09:30
				TH1I-7: Enhanced Angle Estimation Accuracy of Ultra Compact Radars Inspired by a Biomimetic Approach Patrik Grüner, <i>University of Ulm</i> ; Tobias Chaloun, <i>University of Ulm</i> ; Christian Waldschmidt, <i>University of Ulm</i>	09:30-09:40

THURSDAY

TECHNICAL SESSIONS

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	TH2A: Novel Nonlinear Measurement Techniques for 5G Modulation Schemes Chair: Tibault Reveyrand, <i>Xlim - CNRS-Universite De Liroges</i> Co-Chair: Isar Mostafanezhad, <i>Nalu Scientific</i>	TH2B: Advances in Non-Planar Filter Fabrication Techniques Chair: Miguel Laso, <i>Public University of Navarre (UPNA)</i> Co-Chair: Simone Bastioli, <i>RS Microwave</i>	TH2C: Recent Advances in Integrated Acoustic Devices Chair: Amelie Hagelauer, <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> Co-Chair: Clemens Ruppel, <i>TDK</i>	TH2D: State-of-the-Art Technologies for Modeling, Optimization, and Tuning of Microwave Circuits Chair: Natalia Nikolova, <i>McMaster University</i> Co-Chair: Qi-Jun Zhang, <i>Carleton University</i>
10:10-10:20	TH2A-1: A Measurement-Based Error-Vector-Magnitude Model to Assess Nonlinearity at the System Level Yves Rolain; <i>Vrije Universiteit Brussels</i> ; Maral Zyari; <i>Vrije Universiteit Brussels</i> ; Evi Van Nechel; <i>Vrije Universiteit Brussels</i> ; Gerd Vandersteen; <i>Vrije Universiteit Brussels</i>	TH2B-1: A 420 GHz Waveguide Filter Based on MEMS Technology Jianhang Cui; <i>University of Electronic Science and Technology of China</i> ; Caijie Ai; <i>Shenzhen Newcom Telecommunications Co., Ltd</i> ; Yong Zhang; <i>University of Electronic Science and Technology of China</i> ; Jiang Hu; <i>University of Electronic Science and Technology of China</i> ; Bo Yan; <i>University of Electronic Science and Technology of China</i> ; Ruimin Xu; <i>University of Electronic Science and Technology of China</i>	TH2C-1: RF Design of Acoustic-Wave-Lumped-Element-Resonator (AWLR)-Based Bandpass Filters With Constant In-Band Group Delay Dimitra Psychogiou; <i>University of Colorado</i> ; Roberto Gomez-Garcia; <i>University of Alcalá</i> ; Dimitrios Peroulis; <i>Purdue University</i>	TH2D-1: A Historical Account and Technical Reassessment of the Broyden-Based Input Space Mapping Optimization Algorithm Jose Rayas-Sanchez; <i>ITESO - The Jesuit University of Guadalajara</i>
10:20-10:30		TH2B-2: Micromachined Multilayer Bandpass Filter at 270 GHz Using Dual-Mode Circular Cavities Oleksandr Glubokov; <i>KTH Royal Institute of Technology</i> ; Xinghai Zhao; <i>KTH Royal Institute of Technology</i> ; Bernhard Beuerle; <i>KTH Royal Institute of Technology</i> ; James Campion; <i>KTH Royal Institute of Technology</i> ; Umer Shah; <i>KTH Royal Institute of Technology</i> ; Joachim Oberhammer; <i>KTH Royal Institute of Technology</i>		
10:30-10:40	TH2A-2: Vector-Corrected Nonlinear Multi-Port IQ-Mixer Characterization Using Modulated Signals Sebastian Gustafsson; <i>Chalmers University of Technology</i> ; Mattias Thorsell; <i>Chalmers University of Technology</i> ; Koen Buisman; <i>Chalmers University of Technology</i> ; Christian Fager; <i>Chalmers University of Technology</i>	TH2B-3: A Compact CMOS Single-Ended-to-Balanced Bandpass Filter in Millimeter-Wave Band Yi-Ming Chen; <i>National Chung Cheng University</i> ; Shih-Cheng Lin; <i>National Chiayi University</i> ; Sheng-Fuh Chang; <i>National Chung Cheng University</i> ; Hsin-Yen Yang; <i>National Chung Cheng University</i>	TH2C-2: Low Loss, 3.7GHz Wideband BAW Filters, Using High Power Single Crystal AIN-on-SiC Resonators Jeffrey Shealy; <i>Akoustis, Inc.</i> ; Ramakrishna Vetury; <i>Akoustis, Inc.</i> ; Shawn Gibb; <i>Akoustis, Inc.</i> ; Michael Hodge; <i>Akoustis, Inc.</i> ; Pinal Patel; <i>Akoustis, Inc.</i> ; Michael McLain; <i>Akoustis, Inc.</i> ; Alexander Feldman; <i>National Instruments</i> ; Mark Boomgarden; <i>Akoustis, Inc.</i> ; Michael Lewis; <i>Akoustis, Inc.</i> ; Rohan Houlden; <i>Akoustis, Inc.</i> ; Brook Hosse; <i>Akoustis, Inc.</i>	TH2D-2: Circuit Optimization With X-Parameter Models Radoslaw Biernacki; <i>Keysight Technologies</i> ; Mihai Marcu; <i>Keysight Technologies</i> ; David Root; <i>Keysight Technologies</i>
10:40-10:50		TH2B-4: Ceramic Q-Band Bandpass Filters by Laser Micro-Machining of Alumina Substrates Aurelien Perigaud; <i>Xlim - CNRS-Universite De Liroges</i> ; Khalil Drissi; <i>Xlim - CNRS-Universite De Liroges</i> ; Nicolas Delhote; <i>Xlim - CNRS-Universite De Liroges</i>		TH2D-3: Robust Optimization and Tuning of Microwave Filters and Artificial Transmission Lines Using Aggressive Space Mapping Techniques Ana Rodriguez; <i>Universitat Politècnica de Valencia</i> ; José Morro; <i>Universitat Politècnica de Valencia</i> ; Javier Ossorio; <i>Universitat Politècnica de Valencia</i> ; Jordi Selga; <i>Universitat Autònoma de Barcelona</i> ; Marc Sans; <i>Universitat Autònoma de Barcelona</i> ; Ferran Martin; <i>Universitat Autònoma de Barcelona</i> ; Marco Guglielmi; <i>Universitat Politècnica de Valencia</i> ; Vicente Boria-Esbert; <i>Technical University of Valencia</i>
10:50-11:00	TH2A-3: An Active Load-Pull Technique Creating Time-Variant Impedances to Emulate Coupling Between Power Amplifiers Dhecha Nopchinda; <i>Chalmers University of Technology</i> ; Koen Buisman; <i>Chalmers University of Technology</i>	TH2B-5: On-Chip mm-Wave Spherical Dielectric Resonator Bandpass Filter Daniel López Cuenca; <i>University of Stuttgart</i> ; Golzar Alavi; <i>University of Stuttgart</i> ; Jan Hesselbarth; <i>University of Stuttgart</i>	TH2C-3: Fabrication of a Low Insertion Loss Intrinsically Switchable BAW Filter Based on BST FBARs Milad Zolfagharloo Koohi; <i>University of Michigan</i> ; Seungku Lee; <i>University of Michigan</i> ; Amir Mortazawi; <i>University of Michigan</i>	TH2D-4: The Continued Quest for Optimal Microwave Design Wolfgang Hoefler; <i>University of Victoria</i>
11:00-11:10				TH2D-5: Tuning Ports in the Middle of Resonators James Rautio; <i>Sonnet Software, Inc.</i>
11:10-11:30	TH2A-4: Over the Air Characterization for 5G Massive MIMO Array Transmitters Daniel Dinis; <i>Instituto De Telecomunicacoes</i> ; Nuno Carvalho; <i>Instituto De Telecomunicacoes</i> ; José Vieira; <i>Instituto De Telecomunicacoes</i> ; Arnaldo Oliveira; <i>Instituto De Telecomunicacoes</i>	TH2B-6: Waveguide Band-Pass Filter With Reduced Sensitivity to Fabrication Tolerances for Q-Band Payloads Fernando Teberio; <i>Public University of Navarre (UPNA)</i> ; Pablo Soto; <i>Universitat Politècnica de Valencia</i> ; Ivan Arregui; <i>Public University of Navarre</i> ; Txema Lopetegui; <i>Public University of Navarre (UPNA)</i> ; Santiago Cogollos; <i>Universitat Politècnica de Valencia</i> ; Israel Arnedo; <i>Public University of Navarre (UPNA)</i> ; Petronillo Martin-Iglesias; <i>European Space Agency</i> ; Vicente Boria-Esbert; <i>Technical University of Valencia</i> ; Miguel Laso; <i>Public University of Navarre (UPNA)</i>	TH2C-4: Rapid 2D FEM Simulation of Advanced SAW Devices Julius Koskela; <i>GVR Trade SA</i> ; Victor Plessky; <i>GVR Trade SA</i> ; Panagiotis Maniadis; <i>Resonant Inc.</i> ; Patrick Turner; <i>Resonant Inc.</i> ; Balam Willemsen; <i>Resonant Inc.</i>	TH2D-6: Space Mapping: Performance, Reliability, Open Problems and Perspectives Slawomir Koziel; <i>Reykjavik University</i>
11:30-11:40		TH2B-7: 28 GHz Wideband Filter Using Quartz Crystal Waveguide for Massive MIMO Antenna Unit Kengo Onaka; <i>Murata Manufacturing Co., Ltd.</i> ; Hiroshi Kojima; <i>Murata Manufacturing Co., Ltd.</i> ; Kei Matsutani; <i>Murata Manufacturing Co., Ltd.</i> ; Atsushi Horita; <i>Murata Manufacturing Co., Ltd.</i> ; Takaya Wada; <i>Murata Manufacturing Co., Ltd.</i> ; Masayoshi Koshino; <i>Murata Manufacturing Co., Ltd.</i> ; Makoto Kawashima; <i>Murata Manufacturing Co., Ltd.</i> ; Norio Nakajima; <i>Murata Manufacturing Co., Ltd.</i>	TH2C-5: Rugged High-Power Mismatch Characterization of a High-Performance Band 41 FBAR Filter for LTE HPUE Applications Dylan Bepalko; <i>Broadcom Corporation</i> ; Brice Ivira; <i>Broadcom Corporation</i>	TH2D-7: Advanced Design of Large Scale Microwave Devices for Space Applications Using Space Mapping Optimization Mostafa Ismail; <i>Honeywell International Inc.</i> ; Ming Yu; <i>Honeywell International Inc.</i>
11:40-11:50			TH2C-6: Electromagnetic Simulation Workflow for RF Modules in the Age of LTE Guillermo Moreno; <i>QORVO, Inc.</i> ; Alexandre Volatier; <i>QORVO, Inc.</i> ; Gernot Fattering; <i>QORVO, Inc.</i> ; Sebastian Tanuz; <i>QORVO, Inc.</i> ; Pedro Zayas; <i>QORVO, Inc.</i>	TH2D-8: The Journey to Automated Design Optimization and a Vision for the Future John Bandler; <i>McMaster University</i>

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Room: 314	Room: 315	Room: 316A	Room: 316B	Room: 316C
TH2E: Millimeter-Wave/THz Sensors and Systems Chair: Goutam Chattopadhyay, <i>Jet Propulsion Laboratory</i> Co-Chair: John Kuno, <i>Quinstar</i>	TH2F: Advances in Digital Pre-Distortion of Power Amplifiers Chair: John Wood, <i>Obsidian Microwave, LLC</i> Co-Chair: Slim Boumaiza, <i>University of Waterloo</i>	TH2G: Advances in Chipless RFID Technology Chair: Kazuya Yamamoto, <i>Mitsubishi Electric Corporation</i> Co-Chair: Smail Tedjini, <i>Université Grenoble Alpes</i>	TH2H: 3D Printed Antennas and Filters Chair: Dominique Baillargeat, <i>Xlim - CNRS - Université De Limoges</i> Co-Chair: Manos M. Tentzeris, <i>Georgia Institute of Technology</i>	TH2I: Active Array Systems and Beam Formers Chair: Omeed Momeni, <i>University of California, Davis</i> Co-Chair: Glenn Hopkins, <i>Georgia Institute of Technology</i>
TH2E-1: An Ultra-Low-Power 4-Channel 60-GHz Radar Sensor Stefan Shopov, <i>University of Toronto</i> ; Mekdes Girma, <i>Robert Bosch GmbH</i> ; Juergen Hasch; <i>Robert Bosch GmbH</i> ; Sorin Voinescu, <i>University of Toronto</i>	TH2F-1: Magnitude-Selective Affine Function Based Digital Predistorter for RF Power Amplifiers in 5G Small-Cell Transmitters Wenhui Cao, <i>University College Dublin</i> ; Yue Li, <i>University College Dublin</i> ; Anding Zhu, <i>University College Dublin</i>	TH2G-1: A mm-Wave Ultra-Long-Range Energy-Autonomous Printed RFID-Enabled Van-Atta Wireless Sensor: at the Crossroads of 5G and IoT Jimmy Hester, <i>Georgia Institute of Technology</i> ; Manos Tentzeris, <i>Georgia Institute of Technology</i>	TH2H-1: Inkjet-Printed "4D" Tunable Spatial Filters Using On-Demand Foldable Surfaces Syed Abdullah Nauroze, <i>Georgia Institute of Technology</i> ; Manos Tentzeris, <i>Georgia Institute of Technology</i> ; Larissa Novelin, <i>Georgia Institute of Technology</i> ; Glaucio Paulino, <i>Georgia Institute of Technology</i>	TH2I-1: A Ku Band 4-Element Phased Array Transceiver in 180 nm CMOS Xiaoning Zhang, <i>University of Electronic Science and Technology of China</i> ; Dong Chen, <i>University of Electronic Science and Technology of China</i> ; Weiqiang Lu, <i>University of Electronic Science and Technology of China</i> ; Lin Zhang, <i>University of Electronic Science and Technology of China</i> ; Yipeng Wu, <i>University of Electronic Science and Technology of China</i> ; Qinghe Xu, <i>University of Electronic Science and Technology of China</i> ; Zhilin Chen, <i>University of Electronic Science and Technology of China</i> ; Shoutian Sun, <i>University of Electronic Science and Technology of China</i> ; Xiaoyang Liu, <i>University of Electronic Science and Technology of China</i> ; Huihua Liu, <i>University of Electronic Science and Technology of China</i> ; Yanqiu Wu, <i>University of Electronic Science and Technology of China</i> ; Zhilin Chen, <i>University of Electronic Science and Technology of China</i> ; Kai Kang, <i>University of Electronic Science and Technology of China</i>
TH2E-2: Integrated 240 GHz Dielectric Sensor With DC Readout Circuit in THz Lab-on-Chip Measurements Defu Wang, <i>IHP Microelectronics</i> ; Klaus Schmalz, <i>IHP Microelectronics</i> ; Mohamed Eissa, <i>IHP Microelectronics</i> ; Johannes Borngraber, <i>IHP Microelectronics</i> ; Maciej Kucharski, <i>IHP Microelectronics</i> ; Mohamed Elkhouly, <i>Robert Bosch GmbH</i> ; Farabi Jamal, <i>IHP Microelectronics</i> ; Minsu Ko, <i>IHP Microelectronics</i> ; Herman Ng, <i>IHP Microelectronics</i> ; Dietmar Kissinger, <i>IHP Microelectronics</i>	TH2F-2: Compact Undersampled Digital Predistortion for Flexible Single-Chain Multi-Band RF Transmitter Ziming Wang, <i>National University of Ireland Maynooth</i> ; Lei Guan, <i>Nokia Bell Labs</i> ; Ronan Farrell, <i>National University of Ireland Maynooth</i>	TH2G-2: A Novel Design of Chipless RFID Tag Based on Alphabets Smail Tedjini, <i>Université Grenoble Alpes</i> ; Oussama Boulares, <i>University of Tunis El Manar</i> ; Tsitoha Andriamiharivolamena, <i>Grenoble Institute of Technology</i> ; Hatem Rmlil, <i>King Abdulaziz University</i> ; Taoufik Aguilil, <i>University of Tunis El Manar</i>	TH2H-2: Novel 3D Printed Liquid-Metal-Alloy Microfluidics-Based Zigzag and Helical Antennas for Origami Reconfigurable Antenna "Trees" Wenjing Su, <i>Georgia Institute of Technology</i> ; Syed Abdullah Nauroze, <i>Georgia Institute of Technology</i> ; Ryan Bahr, <i>Georgia Institute of Technology</i> ; Manos Tentzeris, <i>Georgia Institute of Technology</i>	TH2I-2: A 64 GHz 2 Gbps Transmit/Receive Phased-Array Communication Link in SiGe With 300 Meter Coverage Bhaskara Rupakula, <i>University of California at San Diego</i> ; Ahmed Nafe, <i>University of California at San Diego</i> ; Samet Zahir, <i>University of California at San Diego</i> ; Tsu-Wei Lin, <i>University of California at San Diego</i> ; Gabriel Rebeiz, <i>University of California at San Diego</i>
TH2E-3: A High-Speed THz Permittivity Measurement System Featuring a Simple 2-Tone Generation Method Using LO Leakage Teruo Jyo, <i>NTT Device Technology Laboratories</i> ; Hiroshi Hamada, <i>NTT Device Technology Laboratories</i> ; Daisuke Kitayama, <i>Nippon Telegraph and Telephone Corp.</i> ; Makoto Yaita, <i>NTT Device Technology Laboratories</i> ; Amine El Moutaouakil, <i>NTT Device Technology Laboratories</i> ; Hideaki Matsuzaki, <i>NTT Device Technology Laboratories</i> ; Hideyuki Nosaka, <i>NTT Device Technology Laboratories</i>	TH2F-3: An Experimental Evaluation of a Digital Predistortion System With Thermal Memory Effects Modeling Zhijian Yu, <i>Huawei Technologies Co., Ltd.</i>	TH2G-3: Near-Field Chipless RFID Encoders With Sequential Bit Reading and High Data Capacity Cristian Herrojo, <i>Universitat Autònoma de Barcelona</i> ; Javier Mata-Contreras, <i>Universitat Autònoma de Barcelona</i> ; Ferran Paredes, <i>Universitat Autònoma de Barcelona</i> ; Ferran Martín, <i>Universitat Autònoma de Barcelona</i>	TH2H-3: Novel Uniquely 3D Printed Intricate Voronoi and Fractal 3D Antennas Ryan Bahr, <i>Georgia Institute of Technology</i> ; Yunnan Fang, <i>Georgia Institute of Technology</i> ; Wenjing Su, <i>Georgia Institute of Technology</i> ; Bijan Tehrani, <i>Georgia Institute of Technology</i> ; Valentina Palazzi, <i>University of Perugia</i> ; Manos Tentzeris, <i>Georgia Institute of Technology</i>	TH2I-3: A Scalable 8-Channel Bidirectional V-Band Beamformer in 130 nm SiGe:C BiCMOS Technology Andrea Malignaggi, <i>IHP Microelectronics</i> ; Minsu Ko, <i>IHP Microelectronics</i> ; Mohamed Elkhouly, <i>Robert Bosch GmbH</i> ; Dietmar Kissinger, <i>IHP Microelectronics</i>
TH2E-4: A W-Band Active Millimeter-Wave Tag IC With Wake-Up Function Sadegh Dadash, <i>University of Toronto</i> ; Juergen Hasch, <i>Robert Bosch GmbH</i> ; Pascal Chevalier, <i>STMicroelectronics</i> ; Andrea Cathelin, <i>STMicroelectronics</i> ; Sorin Voinescu, <i>University of Toronto</i>	TH2F-4: On the Calibration of the Feedback Receiver Using Reduced Sampling Rate and its Application to Digital Predistortion of 5G Power Amplifiers Yehia Beltagy, <i>University of Waterloo</i> ; Arthur Chung, <i>University of Waterloo</i> ; Patrick Mitran, <i>University of Waterloo</i> ; Slim Boumaiza, <i>University of Waterloo</i>	TH2G-4: A Four-Port Selective Differential Feeding Network for High Precision UHF Near-Field Sectional Localization Systems Min Gyo Jeong, <i>Gyeongsang National University</i> ; Ji Hong Kim, <i>Gyeongsang National University</i> ; Sang Hyeon Bae, <i>Gyeongsang National University</i> ; Wang-Sang Lee, <i>Gyeongsang National University</i>	TH2H-4: 3-D Printed Filter Based on Helical Resonators With Variable Width Xiaobang Shang, <i>University of Birmingham</i> ; Jin Li, <i>University of Electronic Science and Technology of China</i> ; Cheng Guo, <i>University of Electronic Science and Technology of China</i> ; Michael Lancaster, <i>University of Birmingham</i> ; Jun Xu, <i>University of Electronic Science and Technology of China</i>	TH2I-4: A Concurrent Dual-Frequency/Angle-of-Incidence Spatio-Spectral Notch Filter Using Walsh Function Passive Sequence Mixers Abhishek Agrawal, <i>Oregon State University</i> ; Arun Natarajan, <i>Oregon State University</i>
TH2E-5: A 125 GHz Transceiver in 65 nm CMOS Assembled With FR4 PCB Antenna for Contactless Wave-Connectors Yanghyo Kim, <i>University of California, Los Angeles</i> ; Yuan Du, <i>University of California, Los Angeles</i> ; Adrian Tang, <i>University of California, Los Angeles</i> ; Yan Zhao, <i>University of California, Los Angeles</i> ; Brian Lee, <i>Broadcom Corporation</i> ; Huan-Neng Chen, <i>Taiwan Semiconductor Manufacturing Co., Ltd.</i> ; Chewmpu Jou, <i>Taiwan Semiconductor Manufacturing Co., Ltd.</i> ; Jason Cong, <i>University of California, Los Angeles</i> ; Tatsuo Itoh, <i>University of California, Los Angeles</i> ; M.C. Frank Chang, <i>University of California, Los Angeles</i>	TH2F-5: Multitone Design for Third Order MIMO Volterra Kernels Zain Khan, <i>KTH Royal Institute of Technology</i> ; Efraim Zenteno, <i>Universidad Católica San Pablo</i> ; Peter Händel, <i>KTH Royal Institute of Technology</i> ; Magnus Isaksson, <i>University of Gävle</i>	TH2G-5: A Compact Two-Bit Metamaterial Inspired Phase Modulated Chipless RFID With Temperature Sensor Karthik Chandrasekaran, <i>Nanyang Technological University</i> ; Jonathan Yip, <i>NUS</i> ; Muhammad Faeyz Karim, <i>Institute for Infocomm Research</i> ; Arokiaswami Alphones, <i>Nanyang Technological University</i> ; Nasimuddin Nasimuddin, <i>Institute for Infocomm Research</i> ; Raj Mittra, <i>University of Central Florida</i> ; Michael Ong, <i>Institute for Infocomm Research</i>	TH2H-5: Compact High-Q Hemispherical Resonators for 3-D Printed Bandpass Filter Applications Jin Li, <i>University of Electronic Science and Technology of China</i> ; Cheng Guo, <i>University of Electronic Science and Technology of China</i> ; Lijian Mao, <i>Shanghai Reeyun Electronics Co. Ltd.</i> ; Jun Xu, <i>University of Electronic Science and Technology of China</i>	TH2I-5: 0.96-to-5.1 GHz 4-Element Spatial-Analog IIR-Enhanced Delay-and-Sum Beamformer Peyman Ahmadi, <i>University of Calgary</i> ; Leonid Belostotski, <i>University of Akron</i> ; Arjuna Madanayake, <i>University of Akron</i> ; James Haslett, <i>University of Calgary</i>
				TH2I-6: A Ku-Band CMOS Build-in-Self-Test Chip Based on Phasor-Sum Detection Method for RF Beamforming Transceivers Hao-Cheng Chan, <i>National Chung Cheng University</i> ; Yung-Jui Kuo, <i>National Chung Cheng University</i> ; Wei-Yang Chen, <i>National Chung Cheng University</i> ; Sheng-Fuh Chang, <i>National Chung Cheng University</i>
				TH2I-7: Characterization and Diagnostics of Active Phased Array Modules Using Non-Invasive Electro-Optic Field Probes With a CW Laser Source Kazem Sabet, <i>EMAG Technologies Inc.</i> ; Richard Darragh, <i>EMAG Technologies Inc.</i> ; Ali Sabet, <i>EMAG Technologies Inc.</i> ; Kamal Sarabandi, <i>University of Michigan</i> ; Khalid Jamil, <i>King Saud University</i> ; Sami Alhumaidi, <i>King Saud University</i>

10:10-10:30

10:30-10:50

10:50-11:00

11:00-11:10

11:10-11:20

11:20-11:30

11:30-11:40

11:40-11:50



INTERACTIVE FORUM



10:30–12:00 | Thursday, 8 June 2017
Hawai'i Convention Center: Overlook Concourse

<p>THIF1-1: A Finite Element Based Eigen-Analysis of THz Nanoantennas Konstantinos Paschaloudis; Democritus University of Thrace; Konstantinos Zekios; Democritus University of Thrace; Petros Allilomes; Democritus University of Thrace; George Kyriacou; Democritus University of Thrace</p>	<p>THIF1-7: Miniaturized Dual-Band Filters Based on Quarter-Mode Substrate Integrated Waveguide Loaded With Double-Sided Stepped-Impedance Complementary Split-Ring Resonators Yong Mao Huang; University of Electronic Science and Technology of China; Wei Jiang; University of South Carolina; Yujia Peng; QORVO, Inc.; Tengxing Wang; University of South Carolina; Haiyan Jin; University of Electronic Science and Technology of China; Supeng Leng; University of Electronic Science and Technology of China; Guoan Wang; University of South Carolina</p>	<p>THIF1-13: A Fully Polar Transmitter for Efficient Software-Defined Radios Earl McCune; Eridan Communications</p>	<p>THIF1-19: A Wideband 60 GHz LNA With 3.3 dB Minimum Noise Figure Samet Zehir; University of California at San Diego; Gabriel Rebeiz; University of California at San Diego</p>
<p>THIF1-2: Lessons From Validation of Computational Electromagnetics Computer Modeling and Simulations Based on IEEE Standard 1597 Sangwook Park; Ajou University</p>	<p>THIF1-8: Compact Quad-Band Bandpass Filter Based on Stub-Loaded Resonators Bal Virdee; London Metropolitan University; Mohamad Farhat; London Metropolitan University; Muhammad Riaz; London Metropolitan University</p>	<p>THIF1-14: Broadband LDMOS 40 W and 55 W Integrated Power Amplifiers Reza Bagger; Ericsson; Henrik Sjöland; Lund University</p>	<p>THIF1-20: Design and Characterization of a Wideband High-Dynamic Range SiGe Cryogenic Low Noise Amplifier Wei-Ting Wong; University of Massachusetts, Amherst; Ahmet Coskun; University of Massachusetts, Amherst; Joseph Bardin; University of Massachusetts, Amherst</p>
<p>THIF1-3: Design of A Microstrip Filtering Power Divider With A Wide Passband and Broad Stopband Ming-Tzung Chen; National Chung Cheng University; Cheng-Han Wu; National Chung Cheng University; Po-Chiun Chang; National Chung Cheng University; Chien-Chih Liu; National Chung Cheng University; Han-Chih Lin; National Chung Cheng University; Ching-Wen Tang; National Chung Cheng University</p>	<p>THIF1-9: Synthesis Method for Matching Filters David Martinez Martinez; INRIA- Sophia Antipolis- Méditerranée; Fabien Seyfert; INRIA- Sophia Antipolis- Méditerranée; Martine Olivi; INRIA- Sophia Antipolis- Méditerranée; Stéphane Bila; Xlim - CNRS- Université De Liroges; François Torres; Xlim - CNRS- Université De Liroges; Johann Sence; Xlim - CNRS- Université De Liroges</p>	<p>THIF1-15: On the Limits of Noise Performance of Field Effect Transistors Marian Pospieszalski; National Radio Astronomy Observatory</p>	<p>THIF1-21: A Low Phase Noise Oscillator Using SIW Combine Resonator Zongqi Cai; University of Electronic Science and Technology of China; Kaida Xu; Xiamen University; Di Lu; University of Electronic Science and Technology of China; Yong Liu; University of Electronic Science and Technology of China; Xiaohong Tang; University of Electronic Science and Technology of China</p>
<p>THIF1-4: Design of Microstrip Ultra-Wideband/Narrow-Band Bandpass Quintplexer Using Distributed Coupling Technique Chia-Lian Wu; National Central University; Wen-Hua Tu; National Central University</p>	<p>THIF1-10: Wide-Band Triple-Resonance Divide-by-4 Injection-Locked Frequency Divider Sheng-lyang Jang; National Taiwan University of Science and Technology; Wen-Cheng Lai; National Taiwan University of Science and Technology; You-Liang Ciou; National Taiwan University of Science and Technology</p>	<p>THIF1-16: D-Band Dicke-Radiometer in 90 nm SiGe BiCMOS Technology Roe Ben Yishay; IBM Research - Haifa; Danny Elad; IBM Research - Haifa</p>	<p>THIF1-22: A Compact X-Band Four-Channel SiGe BiCMOS T/R Chipset for Digital Array Radar Applications Rui Cao; East China Research Institute of Electronic Engineering; Zhuang Li; ECRIEE; Hui Tao; ECRIEE; Lei Sang; Hefei University of Technology</p>
<p>THIF1-5: Compact Bandstop Filter With High Stopband Attenuation Ting Zhang; University of Electronic Science and Technology of China; Jiangfu Bao; University of Electronic Science and Technology of China; Zongqi Cai; University of Electronic Science and Technology of China</p>	<p>THIF1-11: An X-Band Varactor-Tuned Cavity Oscillator Mikael Horberg; Chalmers University of Technology; Thomas Emanuelsson; Ericsson; Per Ligander; Ericsson; Herbert Zirath; Chalmers University of Technology; Dan Kuylenstierna; Chalmers University of Technology</p>	<p>THIF1-17: A 14–31 GHz 1.25 dB NF and 28.5 OIP3 E-mode GaAs pHEMT MMIC Low Noise Amplifier Duy Nguyen; University of California, Davis; Binh Pham; University of California, Davis; Thanh Pham; University of California, Davis; Anh-Vu Pham; University of California, Davis</p>	<p>THIF1-23: GPU Accelerated Partitioned Reconstruction Algorithm for Millimeter-Wave 3D Synthetic Aperture Radar (SAR) Images Sandamali Devadithya; University of Washington; Andreas Pedross-Engel; University of Washington; Claire Watts; University of Washington; Matthew Reynolds; University of Washington</p>
<p>THIF1-6: X-Band Frequency Selective Limiter Using Absorptive Notch Filters Embedded Multiplexers Jia-Chi Chieh; Space and Naval Warfare Systems Command - Pacific; Jason Rowland; Space and Naval Warfare Systems Command - Pacific</p>	<p>THIF1-12: Discrete-Level Envelope Tracking for Broadband, Noise-Like Signals Gregor Lasser; University of Colorado; Maxwell Duffy; University of Colorado; Jason Vance; University of Colorado; Zoya Popovic; University of Colorado</p>	<p>THIF1-18: Sub-20-K Noise Temperature LNA for 67–90 GHz Frequency Band Pekka Kangaslahti; Jet Propulsion Laboratory; Kieran Cleary; California Institute of Technology; Jacob Kooi; Jet Propulsion Laboratory; Lorene Samoska; Jet Propulsion Laboratory; Richard Lai; Northrop Grumman Aerospace Systems; Michael Barsky; Northrop Grumman Aerospace Systems; Xiaobing Mei; Northrop Grumman Aerospace Systems; Stephen Sarkozy; Northrop Grumman Aerospace Systems; Mikko Varonen; VTT Technical Research Centre of Finland</p>	<p>THIF1-24: Static and Dynamic Control of Limiting Threshold in Plasma-Based Microstrip Microwave Power Limiter Antoine Simon; ISAE - SUPAERO; Romain Pascaud; ISAE - SUPAERO; Thierry Callegari; LAPLACE; Laurent Liard; University de Toulouse; Olivier Pascal; LAPLACE; Olivier Pigaglio; LAPLACE</p>
			<p>THIF1-25: A X-Band Surface Plasmons Frequency Selective Surface Based on Spool Localized Surface Plasmons Resonators Yu Lan; University of Electronic Science and Technology of China; Yuehang Xu; University of Electronic Science and Technology of China; Shuxiang Li; University of Electronic Science and Technology of China; Tengda Mei; University of Electronic Science and Technology of China; Binbin Lv; University of Electronic Science and Technology of China; Yong Zhang; University of Electronic Science and Technology of China; Bo Yan; University of Electronic Science and Technology of China; Ruimin Xu; University of Electronic Science and Technology of China</p>



PANEL SESSION: OPPORTUNITIES AND CHALLENGES OF THE BIGGEST SPECTRUM OPENING IN HISTORY FOR NEW SERVICES IN THE 24–450 GHz RANGE



12:15–13:15 | Thursday, 8 June 2017
Hawai'i Convention Center: 313C

Organizers: Michael Marcus, *Virginia Tech*; Ferdo Ivanek, *Stanford University*

Abstract:

This lunchtime panel focuses on the ITU-R work in progress toward the adoption of new frequency allocations by the World Radio Conference 2019 (WRC-19) that vastly surpass all existing allocations. Two spectrum ranges of interest to MTT-S are targeted by WRC-19:

- **24.25–86 GHz** for the future development of International Mobile Telecommunications 2020 (IMT 2020) and beyond
- **275–450 GHz** for terrestrial fixed and mobile allocations, as well as for passive services

In addition, for the US case, the FCC is now seeking suggestions for types of radio systems to use spectrum above 95 GHz and share with many passive uses in much of that spectrum. The panel presents and assesses the opportunities and challenges of these developments of vital interest to MTT-S.

Moderator: Michael Marcus, *Virginia Tech*

Panelists:

- Ho-Jin Song, *Pohang University of Science and Technology*
- Iwao Hosako, *National Institute of Communications Technology*
- Hiroyuki Atarashi, *NTT-DOCOMO*
- Takao Inoue, *National Instruments*



TECHNICAL SESSIONS

13:30–15:10 | Thursday, 8 June 2017 | Hawai'i Convention Center



	Room: 312	Room: 313A	Room: 313B	Room: 314
	TH3A: Next Generation of Design Automation Methods Chair: José Ernesto Rayas Sánchez, <i>IITESO, the Jesuit University of Guadalajara</i> Co-Chair: Vikas Shilimkar, <i>NXP Semiconductors</i>	TH3B: Advanced Nano-Scale Microwave Components and Characterization Chair: Trang Thai, <i>Intel Corporation</i> Co-Chair: Dimitris Pavlidis, <i>Boston University</i>	TH3C: Tunable and Active Integrated Filters Chair: Roberto Gomez-García, <i>University of Alcalá</i> Co-Chair: Pierre Blondy, <i>Xlim - CNRS-Université De Liroges</i>	TH3E: Broadband High-Efficiency Millimeter-Wave Power Amplifiers Chair: Debasis Dawn, <i>North Dakota State University</i> Co-Chair: Raghu Mallavarpu, <i>Raytheon Company</i>
13:30-13:50	TH3A-1: Design of Microstrip Bandpass Filters Using Fragment-Type Coupling Structure Based on Multi-Objective Optimization Lu Wang; <i>University of Science and Technology of China</i> ; Gang Wang; <i>University of Science and Technology of China</i> ; Yuxing He; <i>University of Science and Technology of China</i> ; Rong Zhang; <i>University of Science and Technology of China</i>	TH3B-1: 3D Inductors With Nanowire Through Substrate Vias Ariana Serrano; <i>University of Sao Paulo</i> ; Júlio Pinheiro; <i>University of Sao Paulo</i> ; Sam Jeong; <i>University of Sao Paulo</i> ; Leonardo Gomes; <i>University of Sao Paulo</i> ; Rogério Alvarenga; <i>University of Sao Paulo</i> ; Philippe Ferrari; <i>IMEP-LAHC</i> ; Gustavo Rehder; <i>University of Sao Paulo</i>	TH3C-1: A Notch-Feedback Based 4th-Order 2–4GHz Bandpass Filter System for S-Band Radar Receiver Protection Under the LTE and Radar Coexistence Laya Mohammadi; <i>Virginia Polytechnic Institute and State University</i> ; Kwang-Jin Koh; <i>Virginia Tech</i>	TH3E-1: A Compact 29% PAE at 6 dB Power Back-off E-mode GaAs pHEMT MMIC Doherty Power Amplifier at Ka-Band Duy Nguyen; <i>University of California, Davis</i> ; Binh Pham; <i>University of California, Davis</i> ; Anh-Vu Pham; <i>University of California, Davis</i>
13:50-14:00	TH3A-2: Multi-Delay Rational Modeling of Lumped-Distributed Systems Maral Zyari; <i>Vrije Universiteit Brussel</i> ; Yves Rolain; <i>Vrije Universiteit Brussels</i> ; Francesco Ferranti; <i>Institut Mines-Télécom / Télécom Bretagne</i> ; Gerd Vandersteen; <i>Vrije Universiteit Brussels</i> ; Piet Brounders; <i>Vrije Universiteit Brussels</i>	TH3B-2: CMOS-Compatible On-Chip Self-Rolled-Up Inductors for RF/mm-Wave Applications Wen Huang; <i>University of Illinois at Urbana-Champaign</i> ; Jingchao Zhou; <i>University of Illinois at Urbana-Champaign</i> ; Paul Froeter; <i>University of Illinois at Urbana-Champaign</i> ; Kathy Walsh; <i>University of Illinois at Urbana-Champaign</i> ; Moyang Li; <i>University of Illinois at Urbana-Champaign</i> ; Siyu Liu; <i>University of Illinois at Urbana-Champaign</i> ; Julian Michaels; <i>University of Illinois at Urbana-Champaign</i> ; Songbin Gong; <i>University of Illinois at Urbana-Champaign</i> ; Xueling Li; <i>University of Illinois at Urbana-Champaign</i>	TH3C-2: Tunable RF Front-End Filter With Wideband Blocker Suppression for Multi-Standard Applications Md Naimul Hasan; <i>University of California, Davis</i> ; Xiaoguang Liu; <i>University of California, Davis</i>	TH3E-2: An Adaptively Biased Stacked Power Amplifier Without Output Matching Network in 90-nm CMOS Yi-Chi Lee; <i>National Tsing Hua University</i> ; Tai-Yi Chen; <i>National Tsing Hua University</i> ; Jenny Yi-Chun Liu; <i>National Tsing Hua University</i>
14:00-14:10		TH3B-3: Zero-Bias, 50 dB Dynamic Range, V-Band Power Detector Based on CVD Graphene-on-Glass Mohamed Elsayed; <i>Aachen University of Technology</i> ; Ahmed Ghareeb; <i>RWTH Aachen University</i> ; Renato Negra; <i>RWTH Aachen University</i> ; Mehrdad Shayan; <i>Advanced Microelectronic Center Aachen (AMICA) AMO GmbH</i> ; Zhenxing Wang; <i>Advanced Microelectronic Center Aachen (AMICA) AMO GmbH</i> ; Daniel Neumaier; <i>Advanced Microelectronic Center Aachen (AMICA) AMO GmbH</i>	TH3C-3: A Tunable Reflection-Mode N-Path Filter Using 45-nm SOI CMOS Jeffrey Bonner-Stewart; <i>North Carolina State University</i> ; Charley Wilson; <i>North Carolina State University</i> ; Brian Floyd; <i>North Carolina State University</i>	TH3E-3: A Wideband Millimeter-Wave Differential Stacked-FET Power Amplifier With 17.3 dBm Output Power and 25% PAE in 45 nm SOI CMOS Jingjing Xia; <i>University of Waterloo</i> ; Slim Boumaiza; <i>University of Waterloo</i>
14:10-14:20	TH3A-3: A Novel Eigenmode-Based Neural Network for Fully Automated Microstrip Bandpass Filter Design Masataka Ohira; <i>Saitama University</i> ; Ao Yamashita; <i>Saitama University</i> ; Zhewang Ma; <i>Saitama University</i> ; Xiaolong Wang; <i>Saitama University</i>	TH3B-4: Transparent 5.8 GHz Filter Based on Graphene Jinchun Wang; <i>University of Electronic Science and Technology of China</i> ; Yifei Guan; <i>University of Electronic Science and Technology of China</i> ; Songbai He; <i>University of Electronic Science & Technology of China</i>		
14:20-14:30		TH3B-5: Near-Field Scanning Millimeter-Wave Microscope Combined With a Scanning Electron Microscope Kamel Haddadi; <i>Institute of Electronics, Microelectronics and Nan</i> ; Olaf Haenssler; <i>University of Oldenburg</i> ; Christophe Boyaval; <i>IEMN</i> ; Didier Theron; <i>IEMN</i> ; Gilles Dambrine; <i>IEMN</i>	TH3C-4: Silicon-Integrated Signal-Interference Dual-Band Bandpass Filter for GNSS Application Mohammed Adnan Addou; <i>University of Limoges</i> ; Julien Lintignat; <i>University of Limoges</i> ; Roberto Gomez-García; <i>University of Alcalá</i> ; Bruno Barelaud; <i>University of Limoges</i> ; François Torres; <i>University of Limoges</i> ; Stéphane Bila; <i>University of Limoges</i> ; Bernard Jarry; <i>University of Limoges</i>	TH3E-4: A 50-nm Gate-Length Metamorphic HEMT Distributed Power Amplifier MMIC Based on Stacked-HEMT Unit Cells Fabian Thome; <i>Fraunhofer IAF</i> ; Oliver Ambacher; <i>Fraunhofer IAF</i>
14:30-14:50	TH3A-4: Multi-Objective Mixed-Integer Design Optimization of Planar Inductors Using Surrogate Modeling Techniques Slawomir Koziel; <i>Reykjavik University</i> ; Piotr Kurgan; <i>Reykjavik University</i> ; John Bandler; <i>McMaster University</i>			
14:50-15:00	TH3A-5: Space Mapping Post-Fabrication Tuning of 3D Printed Air-Filled Waveguide Filter Song Li; <i>University of Regina</i> ; Qingsha Cheng; <i>South China University of Technology</i> ; Paul Laforge; <i>University of Regina</i> ; Xiaolin Fan; <i>University of Regina</i>	TH3B-6: Accurate Analysis of Plasmon Propagation in Metal and Graphene Nanostructures Luca Pierantoni; <i>Universita Politecnica delle Marche</i> ; Davide Mencarelli; <i>Universita Politecnica delle Marche</i> ; Matteo Stocchi; <i>Universita Politecnica delle Marche</i>	TH3C-5: A Novel Switchable SAW Duplexer for Band 28 Kei Matsutani; <i>Murata Manufacturing Co., Ltd.</i> ; Masakazu Tani; <i>Murata Manufacturing Co., Ltd.</i> ; Hideki Tsukamoto; <i>Murata Manufacturing Co., Ltd.</i> ; Atsushi Horita; <i>Murata Manufacturing Co., Ltd.</i> ; Kengo Onaka; <i>Murata Manufacturing Co., Ltd.</i> ; Takaya Wada; <i>Murata Manufacturing Co., Ltd.</i> ; Masayoshi Koshino; <i>Murata Manufacturing Co., Ltd.</i> ; Makoto Kawashima; <i>Murata Manufacturing Co., Ltd.</i> ; Norio Nakajima; <i>Murata Manufacturing Co., Ltd.</i>	TH3E-5: A W-Band SiGe Power Amplifier With Psat of 23 dBm and PAE of 16.8% at 95 GHz Chandrakanth Chappidi; <i>Princeton University</i> ; Kaushik Sengupta; <i>Princeton University</i>
15:00-15:10	TH3A-6: Acceleration of a Physically Derived Micro-Modeling Circuit for Packaging Problems Using Graphics Processing Units Yuhang Dou; <i>Chinese University of Hong Kong</i> ; Ke-Li Wu; <i>Chinese University of Hong Kong</i>			

TECHNICAL SESSIONS

13:30–15:10 | Thursday, 8 June 2017 | Hawai'i Convention Center



Room: 315	Room: 316A	Room: 316B	Room: 316C	
TH3F: Millimeter-Wave and Terahertz CMOS Circuit Techniques Chair: Hwei Wang, <i>National Taiwan University</i> Co-Chair: James Buckwalter, <i>University of California, Santa Barbara</i>	TH3G: Power Amplifiers and Instrumentation for HF, VHF, and UHF Chair: Frederick Raab, <i>Green Mountain Radio Research LLC</i> Co-Chair: Taylor Barton, <i>University of Colorado</i>	TH3H: Packaging and Novel Microwave Interconnects Chair: Matt King, <i>Georgia Institute of Technology</i> Co-Chair: Norman Chijang, <i>SSL</i>	TH3I: Novel Transceiver Architectures for Wireless Communications Chair: Y. Ethan Wang, <i>University of California, Los Angeles</i> Co-Chair: Arvind Keerti, <i>Qualcomm, Inc.</i>	
TH3F-1: A 32 Gbit/s 16QAM CMOS Receiver in 300 GHz Band Shinsuke Hara, <i>National Institute of Information and Communications Technology</i> ; Kosuke Katayama, <i>Hiroshima University</i> ; Kyoya Takano, <i>Hiroshima University</i> ; Ruibing Dong, <i>National Institute of Information and Communications Technology</i> ; Issei Watanabe, <i>National Institute of Information and Communications Technology</i> ; Norihiko Sekine, <i>National Institute of Information and Communications Technology</i> ; Akifumi Kasamatsu, <i>National Institute of Information and Communications Technology</i> ; Takeshi Yoshida, <i>Hiroshima University</i> ; Shuhei Amakawa, <i>Hiroshima University</i> ; Minoru Fujishima, <i>Hiroshima University</i>	TH3G-1: High-Efficiency and Flat-Gain Doherty Type Transmitter Using a 180-Degree Hybrid-Combiner Ramon Beltran, <i>Qualcomm Technologies, Inc.</i>	TH3H-1: Dielectric Waveguide Based Multi-Mode Sub-THz Interconnect Channel for High Data-Rate High Bandwidth-Density Planar Chip-to-Chip Communications Bo Yu, <i>University of California, Davis</i> ; Yu Ye, <i>University of California, Davis</i> ; Xuan Ding, <i>University of California, Davis</i> ; Yuhao Liu, <i>University of California, Davis</i> ; Xiaoguang Liu, <i>University of California, Davis</i> ; Jane Gu, <i>University of California, Davis</i>	TH3I-1: Frequency Translational RF Receiver With Time Varying Transmission Lines (TVTL) Qianteng Wu, <i>University of California, Los Angeles</i> ; Xiating Zou, <i>University of California, Los Angeles</i> ; Shihan Qin, <i>University of California, Los Angeles</i> ; Ethan Wang, <i>University of California, Los Angeles</i>	13:30-13:50
TH3F-2: A Highly Linear Bidirectional Phase Shifter Based on Vector Modulator for 60 GHz Applications Frederic Hameau, <i>CEA-LETI</i> ; Aurelien Larie, <i>CEA-LETI</i> ; Baudouin Martineau, <i>CEA-LETI</i> ; Clement Jany, <i>CEA-LETI</i> ; Eric Mercier, <i>CEA-LETI</i>	TH3G-2: RF-Input Load Modulated Balanced Amplifier Prathamesh Pednekar, <i>University of Colorado</i> ; Taylor Barton, <i>University of Colorado</i>	TH3H-2: Wideband LTCC Transitions of Flip-Chip to Waveguides/Connectors for a Highly Dense Phased Array System-in-Package at 60 GHz Saman Jafarloo, <i>University of California, Irvine</i> ; Atabak Rashidian, <i>Peraso Technologies Inc.</i> ; Mihai Tazlauanu, <i>Peraso Technologies Inc.</i>	TH3I-2: A 0.7–1 GHz Tunable RF Front-End Module for FDD and In-Band Full-Duplex Using SOI CMOS and SAW Resonators Barend van Liempd, <i>IMEC</i> ; Akshay Visweswaran, <i>IMEC</i> ; Saneaki Ariumi, <i>Murata Manufacturing Co., Ltd.</i> ; Shinya Hitomi, <i>Murata Manufacturing Co., Ltd.</i> ; Ilja Ocket, <i>IMEC</i> ; Piet Wambacq, <i>IMEC</i> ; Jan Craninckx, <i>IMEC</i>	13:50-14:10
TH3F-3: A Compact 213-GHz CMOS Fundamental Oscillator With 0.56 mW Output Power and 3.9% Efficiency Using a Capacitive Transformer Hao Wang, <i>University of California, Davis</i> ; Daniel Kuzmenko, <i>University of California, Davis</i> ; Bo Yu, <i>University of California, Davis</i> ; Yu Ye, <i>University of California, Davis</i> ; Jane Gu, <i>University of California, Davis</i> ; Hooman Rashtian, <i>University of California, Davis</i> ; Xiaoguang Liu, <i>University of California, Davis</i>	TH3G-3: UHF Power Amplifier With Self-Contained Dynamic Power Control for Enhanced Efficiency in Back-Off Operation Marc Franco, <i>QORVO, Inc.</i> ; Daniel Habecker, <i>QORVO, Inc.</i>	TH3H-3: E-Band Characterization of 3D-Printed Dielectrics for Fully-Printed Millimeter-Wave Wireless System Packaging Bijan Tehrani, <i>Georgia Institute of Technology</i> ; Ryan Bahr, <i>Georgia Institute of Technology</i> ; Wenjing Su, <i>Georgia Institute of Technology</i> ; Benjamin Cook, <i>Texas Instruments, Inc.</i> ; Manos Tentzeris, <i>Georgia Institute of Technology</i>	TH3I-3: Simultaneous Transmission and Receive (STAR) From DC to RF Mathew Biedka, <i>University of California, Los Angeles</i> ; Ethan Wang, <i>University of California, Los Angeles</i> ; Rui Zhu, <i>University of California, Los Angeles</i> ; Qiang Xu, <i>University of California, Los Angeles</i>	14:10-14:30
TH3F-4: A 194 GHz Fundamental Frequency Oscillator With 1.85 mW Differential Output Power in 65 nm CMOS Thanh Dat Nguyen, <i>Chungbuk National University</i> ; Jong-Phil Hong, <i>Chungbuk National University</i>	TH3G-4: Instrumentation Receiver for Medium Frequency Propagation and Noise Measurements Richard Campbell, <i>Portland State University</i> ; James Davey, <i>Portland State University</i>	TH3H-4: Q-Band InP/CMOS Receiver and Transmitter Beamformer Channels Fabricated by 3D Heterogeneous Integration Andrew Carter, <i>Teledyne Scientific and Imaging</i> ; Miguel Urteaga, <i>Teledyne Scientific</i> ; Zachary Griffith, <i>Teledyne Scientific and Imaging</i> ; Kang-Jin Lee, <i>Teledyne Scientific and Imaging</i> ; Jonathan Roderick, <i>Teledyne Scientific and Imaging</i> ; Petra Rowell, <i>Teledyne Scientific and Imaging</i> ; Josh Bergman, <i>Teledyne Scientific and Imaging</i> ; Sangki Hong, <i>Tezzaron Semiconductor</i> ; Robert Patti, <i>Tezzaron Semiconductor</i> ; Carl Petteway, <i>Novati Technologies</i> ; Gill Fountain, <i>Novati Technologies</i>	TH3I-4: 0.18 um SiGe BiCMOS Microwave/Millimeter-Wave Dual-Mode Dual-Conversion Receiver Architecture With a Tunable RF Channel Selection at Low-Flicker-Noise Microwave Mode Wei Ling Chang, <i>National Chiao Tung University</i> ; Chinchun Meng, <i>National Chiao Tung University</i> ; Shih-Der Yang, <i>National Chiao Tung University</i> ; Guo-Wei Huang, <i>National Nano Device Laboratories</i>	14:30-14:50
TH3F-5: A G-Band SPST Switch With 2.4-dB Insertion Loss and Minimum 28.5-dB Isolation Using Grounded Co-Planar Waveguide Folded Coupled Line Topology in 65-nm CMOS Technology Yunshan Wang, <i>National Taiwan University</i> ; Chun-Nien Chen, <i>National Taiwan University</i> ; Yu Ye, <i>University of California, Davis</i> ; Yen-Chih Chen, <i>Graduate Institute of Communication Engineering</i> ; Bo Yu, <i>University of California, Davis</i> ; Jane Gu, <i>University of California, Davis</i> ; Hwei Wang, <i>National Taiwan University</i>	TH3G-5: A Low Cost, Printed Microwave Based Level Sensor With Integrated Oscillator Readout Circuitry Muhammad Akram Karimi, <i>King Abdullah University of Science and Technology</i> ; Muhammad Arsalan, <i>Saudi Aramco</i> ; Atif Shamim, <i>King Abdullah University of Science and Technology</i>	TH3H-5: An LTCC-Based 8-Channel 4 to 12 GHz Hybrid Channel-Dropping Multiplexer for a CubeSat Radiometer Mission Christopher Galbraith, <i>MIT Lincoln Laboratory</i>	TH3I-5: A 145 uW 315 MHz Harmonically Injection-Locked RF Transmitter With Two-Step Frequency Multiplication Techniques Nan Dau, <i>National Chiao Tung University</i> ; Yen-Ting Chen, <i>National Chiao Tung University</i> ; Yu-Te Liao, <i>National Chiao Tung University</i>	14:50-15:00
TH3F-6: 0.8 mW, 0.1–110 GHz RF Power Detector With 6 GHz Video Bandwidth for Multigigabit Software Defined Radios Saad Qayyum, <i>RWTH Aachen University</i> ; Renato Negra, <i>RWTH Aachen University</i>	TH3G-6: Development of a UHF Transponder for Geological Monitoring of Boreholes Drilled Through Ice Sheets Using Phase-Sensitive FMCW Radar Amin Amiri, <i>University College London</i> ; Paul Brennan, <i>University College London</i> ; Lai Bun Lok, <i>University College London</i>			15:00-15:10

Future Prospects for Medical Devices, Metamaterials, and Communication Systems starting at 13:30 (see p. 78 for details)





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INTERACTIVE FORUM



13:30–15:00 | Thursday, 8 June 2017
Hawai'i Convention Center: Overlook Concourse

<p>THIF2-1: Descent-Based Coefficient Estimator for Analog Predisortion of a Dual-Band RF Transmitter Richard Braithwaite; <i>Tarana Wireless</i></p>	<p>THIF2-7: A 7–42 GHz Dual-Mode Reconfigurable Mixer With an Integrated Active IF Balun Thuy Nguyen; <i>University of California, Davis</i>; Kohei Fujii; <i>MACOM Technology Solutions</i>; Anh-Vu Pham; <i>University of California, Davis</i></p>	<p>THIF2-13: An S-Band 3-W Load-Reconfigurable Power Amplifier With 50–76% Efficiency for VSWR up to 4:1 Yu-Chen Wu; <i>Purdue University</i>; Mohammad Abu Khater; <i>Purdue University</i>; Abbas Semnani; <i>Purdue University</i>; Dimitrios Peroulis; <i>Purdue University</i></p>
<p>THIF2-2: Modeling PA Linearity and Efficiency in MIMO Transmitters Filipe Barradas; <i>Universidade de Aveiro</i>; Pedro Cabral; <i>Instituto De Telecomunicacoes</i>; Telmo Cunha; <i>Instituto De Telecomunicacoes</i>; Jose Pedro; <i>Instituto De Telecomunicacoes</i></p>	<p>THIF2-8: Non-Destructive Dielectric Characterization Method for Food Products Abanob Abdelnour; <i>Grenoble Institute of Technology</i>; Ahmed Rennane; <i>Université Grenoble Alpes</i>; Darine Kaddour; <i>Université Grenoble Alpes</i>; Smail Tedjini; <i>Université Grenoble Alpes</i></p>	<p>THIF2-14: Concurrent Dual-Band Access GaN HEMT MMIC Amplifier Suppressing Inter-Band Interference Ryo Ishikawa; <i>University of Electro-Communications</i>; Yoichiro Takayama; <i>University of Electro-Communications</i>; Kazuhiko Honjo; <i>University of Electro-Communications</i></p>
<p>THIF2-3: A Study of the Terahertz C-V Characteristic of the Schottky Barrier Diode Tianhao Ren; <i>University of Electronic Science and Technology of China</i>; Yong Zhang; <i>University of Electronic Science and Technology of China</i></p>	<p>THIF2-9: Highly Efficient and Linear Class-E CMOS Digital Power Amplifier Using a Compensated Marchand Balun and Circuit-Level Linearization Achieving 67% Peak DE and -40 dBc ACLR Without DPD Mohsen Hashemi; <i>Delft University of Technology</i>; Lei Zhou; <i>Ampleon</i>; Yiyu Shen; <i>Delft University of Technology</i>; Mohammadreza Mehrpoo; <i>Delft University of Technology</i>; Leo de Vreede; <i>Delft University of Technology</i></p>	<p>THIF2-15: Tunable RF Bandpass Filter for Interference Suppression in Software Defined Radios Rui Zhu; <i>University of California, Los Angeles</i>; Yuanxun Ethan Wang; <i>University of California, Los Angeles</i></p>
<p>THIF2-4: Fully Autonomous Multiple-Jammer Suppression Wesley Allen; <i>Purdue University</i>; Dimitrios Peroulis; <i>Purdue University</i></p>	<p>THIF2-10: High Efficiency RF Power Amplifiers Featuring Package Integrated Load Insensitive Class-E Devices Abdul Qureshi; <i>Delft University of Technology</i>; Mustafa Acar; <i>Ampleon</i>; Sergio Pires; <i>Ampleon</i>; Leo de Vreede; <i>Delft Institute of Microsystems and Nanoelectronics</i></p>	<p>THIF2-16: Ultra-Wideband Balanced Schottky Envelope Detector for Data Communication With High Bitrate to Carrier Frequency Ratio Angel Blanco Granja; <i>Technische Universität Darmstadt</i>; Bruno Cimoli; <i>Technical University of Denmark</i>; Sebastián Rodríguez; <i>Technical University of Denmark</i>; Rolf Jakoby; <i>Technische Universität Darmstadt</i>; Jesper Jensen; <i>Bifrost Communications</i>; Andreas Penirschke; <i>Mittelhessen University of Applied Sciences</i>; Idelfonso Tafur Monroy; <i>Technical University of Denmark</i>; Tom Johansen; <i>Technical University of Denmark</i></p>
<p>THIF2-5: A Planar Vertically-Integrated Tunable Filter/Antenna With Constant Absolute Bandwidth Ricardo Lovato; <i>University of Central Florida</i>; Xun Gong; <i>University of Central Florida</i></p>	<p>THIF2-11: A 2-W GaN-Based Three-Level Class-D Power Amplifier With Tunable Back-off Efficiency Tatsuya Soma; <i>NEC Corporation</i>; Shinichi Hori; <i>NEC Corporation</i>; Andreas Wentzel; <i>Ferdinand-Braun-Institut</i>; Wolfgang Heinrich; <i>Ferdinand-Braun-Institut</i>; Kazuaki Kunihiro; <i>NEC Corporation</i></p>	<p>THIF2-17: A Radio Transceiver Architecture for Coexistence of 4G-LTE and 5G Systems Used in Mobile Devices Chien-Chang Huang; <i>Yuan Ze University</i>; Wei-Che Lin; <i>Yuan Ze University</i></p>
<p>THIF2-6: A 0.6–2.8 GHz CMOS RF Vector Multiplier With Low RMS Magnitude and Phase Errors and High P1dB Yiling Xu; <i>University of Waterloo</i>; Jingjing Xia; <i>University of Waterloo</i>; Slim Boumaiza; <i>University of Waterloo</i></p>	<p>THIF2-12: Novel Digital Microwave PA With More Than 40% PAE Over 10 dB Power Back-Off Range Thomas Hoffmann; <i>Ferdinand-Braun-Institut</i>; Andreas Wentzel; <i>Ferdinand-Braun-Institut</i>; Leibniz-Institut für Höc; <i>Florian Huehn</i>; <i>FBH Berlin</i>; Wolfgang Heinrich; <i>Ferdinand-Braun-Institut</i></p>	

THURSDAY

TECHNICAL SESSIONS

15:40–17:00 | Thursday, 8 June 2017 | Hawai'i Convention Center



	Room: 312	Room: 313A	Room: 313B	Room: 314
	TH4A: Advanced Modeling Techniques for Circuit Simulation Chair: Fabrizio Bonani, <i>Politecnico di Torino</i> Co-Chair: Peter Aaen, <i>Univ. of Surrey</i>	TH4B: Advances in Guiding, Absorbing and Non-Reflecting Structures Chair: Jan Machac, <i>Czech Technical University in Prague</i> Co-Chair: Ingo Wolff, <i>IMST GmbH</i>	TH4C: Multi-Mode, Multi-Band and Multi-Layer Filters Chair: Sanghoon Shin, <i>Naval Research Laboratory</i> Co-Chair: Amir Mortazawi, <i>University of Michigan</i>	TH4E: The Latest Components for Commercial Space Applications Chair: Norman Chiang, <i>SSL</i> Co-Chair: James Sowers, <i>SSL</i>
15:40-16:00	TH4A-1: A Multi-Finger Modeling Approach to Correctly Predict the Inherent Stability of a Custom Active Device Sergio Colangeli; <i>University of Rome Tor Vergata</i> ; Rocco Giofre; <i>University of Rome Tor Vergata</i> ; Walter Ciccognani; <i>University of Rome Tor Vergata</i> ; Ernesto Limiti; <i>University of Rome Tor Vergata</i>	TH4B-1: Characterization of Substrate Integrated Non Radiative Dielectric Slab Waveguide for Cross-Polarized mm-Wave Components Walid Dyab; <i>École Polytechnique de Montréal</i> ; Ahmed Sakr; <i>École Polytechnique de Montréal</i> ; Ke Wu; <i>École Polytechnique de Montréal</i>	TH4C-1: A Controllable SISL Dual-Band BPF for WLAN Applications Yutong Chu; <i>University of Electronic Science and Technology of China</i> ; Kaixue Ma; <i>University of Electronic Science and Technology of China</i> ; Shouxian Mou; <i>University of Electronic Science and Technology of China</i>	TH4E-1: Radiation Aspects and Performance of GaN Power Converters and RFICs for Airborne and Space Applications Rüdiger Quay; <i>Fraunhofer Institute for Applied Solid State Physics</i> ; Dirk Schwantuschke; <i>Fraunhofer IAF</i> ; Patrick Waltereit; <i>Fraunhofer Institute for Applied Solid State Physics</i> ; Peter Brueckner; <i>Fraunhofer Institute for Applied Solid State Physics</i> ; Richard Reiner; <i>Fraunhofer Institute for Applied Solid State Physics</i>
16:00-16:20	TH4A-2: A Hybrid Modeling Approach for Drain-Source Capacitance of Source Field Plated GaN FET Devices for Multi-Bias Application Subrata Halder; <i>QORVO, Inc.</i> ; John McMacken; <i>QORVO, Inc.</i> ; Neil Craig; <i>QORVO, Inc.</i> ; Joe Gering; <i>QORVO, Inc.</i>	TH4B-2: A New Resonance in a Circular Waveguide Cavity Assisted by Anisotropic Metasurfaces Xiaoqiang Li; <i>University of California, Los Angeles</i> ; Mohammad Memarian; <i>Sharif University of Technology</i> ; Tatsuo Itoh; <i>University of California, Los Angeles</i>	TH4C-2: Design of Compact Multilayered Quad-Band Bandpass Filter Yung-Wei Chen; <i>National Cheng Kung University</i> ; Tzu-Chun Tai; <i>National Cheng Kung University</i> ; Hung-Wei Wu; <i>Kun Shan University</i> ; Yan-Kuin Su; <i>National Cheng Kung University</i> ; Yeong-Her Wang; <i>National Cheng Kung University</i>	TH4E-2: V-Band Receiver for Commercial Space Applications Sung Park; <i>SSL</i> ; Rick-Nghia Nguyen; <i>SSL</i> ; Steve-Trung Nguyen; <i>SSL</i> ; Norman Chiang; <i>SSL</i> ; James Sowers; <i>SSL</i>
16:20-16:40	TH4A-3: A Comprehensive Technique for the Assessment of Microwave Circuit Design Variability Through Physical Simulations Simona Donati Guerrieri; <i>Politecnico di Torino</i> ; Fabrizio Bonani; <i>Politecnico di Torino</i> ; Giovanni Ghione; <i>Politecnico di Torino</i>	TH4B-3: Composites-Based Microwave Absorbers: Toward a Unified Model Alexis Chevalier; <i>Lab-STICC</i> ; Vincent Laur; <i>Lab-STICC</i>	TH4C-3: Design of Fourth Order Microstrip Filter Using the Open Loop Resonator With a Novel Interdigital Loading Element Ceyhun Karpuz; <i>Pamukkale University</i> ; Pinar Ozturk Ozdemir; <i>Pamukkale University</i>	TH4E-3: High-Efficiency High-Power Linearized L-Band SSPA for Navigational Satellites Allen Katz; <i>The College of New Jersey</i> ; John MacDonald; <i>Linearizer Technology Inc.</i> ; Roger Dorval; <i>Linearizer Technology Inc.</i> ; Brian Eggleston; <i>Linearizer Technology Inc.</i> ; Paul Drexler; <i>Linearizer Technology Inc.</i> ; Christopher Liang; <i>Linearizer Technology Inc.</i>
16:40-17:00	TH4A-4: Asymmetrical Conductance Model to Analyze Resonant Tunneling Diode Terahertz Oscillators Sebastian Diebold; <i>Osaka University</i> ; Masayuki Fujita; <i>Osaka University</i> ; Tadao Nagatsuma; <i>Osaka University</i>	TH4B-4: Extreme-Angle Metamaterial-Based Anti-Reflection Layer Yuchu He; <i>University of Toronto</i> ; George Eleftheriades; <i>University of Toronto</i>	TH4C-4: Design of Tri-Band Balanced Bandpass Filter With Controllable Frequencies and Bandwidths Shi-Xuan Zhang; <i>South China University of Technology</i> ; Zhi-Han Chen; <i>South China University of Technology</i> ; Qing-Xin Chu; <i>South China University of Technology</i>	TH4E-4: High-Power K-Band GaN PA MMICs and Module for NPR and PAE Salah Din; <i>Northrop Grumman Aerospace Systems</i> ; Andy Morishita; <i>Northrop Grumman Corporation</i> ; Neal Yamamoto; <i>Northrop Grumman Corporation</i> ; Chris Brown; <i>Northrop Grumman Corporation</i> ; Mike Wojtowicz; <i>Northrop Grumman Corporation</i> ; Mansoor Siddiqui; <i>Northrop Grumman Corporation</i>

TECHNICAL SESSIONS

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Room: 315	Room: 316A	Room: 316B	Room: 316C	
TH4F: Dynamic-Supply Power Amplifiers Chair: Anh-Vu Pham, <i>University of California, Davis</i> Co-Chair: Gregor Lasser, <i>University of Colorado</i>	TH4G: Advances in Photonically-Enabled Receiver Technologies Chair: Tadao Nagatsuma, <i>Osaka University</i> Co-Chair: Jeffery Nanzer, <i>Michigan State University</i>	TH4H: Enabling Technologies for Space Systems Chair: Rudy Emrick, <i>Orbital ATK</i> Co-Chair: Mohamed Abouzahra, <i>Massachusetts Institute of Technology, Lincoln Laboratory</i>	TH4I: 5G Transceiver and Arrays Chair: Ruediger Quay, <i>Fraunhofer Institute for Applied Solid State Physics</i> Co-Chair: Farshid Aryanfar, <i>Straight Path Communications</i>	
TH4F-1: Highly Efficient Class-G Supply-Modulated Amplifier With 75 MHz Modulation Bandwidth for 1.8–1.9 GHz LTE FDD Applications Nikolai Wolff; <i>Ferdinand-Braun-Institut</i> ; Wolfgang Heinrich; <i>Ferdinand-Braun-Institut</i> ; Olof Bengtsson; <i>Ferdinand-Braun-Institut</i>	TH4G-1: ACP-OPLL Photonic IC With No Balanced Photodetection for High Dynamic Range RF Photonic Links Longtao Xu; <i>University of Massachusetts</i> ; Shilei Jin; <i>University of Massachusetts, Dartmouth</i> ; Yifei Li; <i>University of Massachusetts, Dartmouth</i>	TH4H-1: Tactical Ka-Band MIL-SATCOM Using LEO Small Satellites Mark Ray; <i>Army SMDC</i> ; Tyrel Newton; <i>Tether's Unlimited Inc.</i> ; Mason Nixon; <i>US Army SMDC/ARSTRAT</i> ; John London III; <i>U.S. Army</i>	TH4I-1: A 30-Gb/s, 2×6-bit I/Q RF-DAC Transmitter With 19.9 dBm in the 20–32-GHz Band Stefan Shopov; <i>University of Toronto</i> ; Sorin Voinescu; <i>University of Toronto</i>	15:40-16:00
TH4F-2: Multi-Level Supply-Modulated Chireix Outphasing for LTE Signals Tommaso Cappello; <i>University di Bologna</i> ; Corrado Florian; <i>University di Bologna</i> ; Taylor Barton; <i>University of Colorado</i> ; Michael Litchfield; <i>University of Colorado</i> ; Zoya Popovic; <i>University of Colorado</i>	TH4G-2: Ultrafast and Broadband Graphene Photodetectors Based on Plasmonic Nanoantennas Semih Cakmakyan; <i>University of California, Los Angeles</i> ; Ping Keng Lu; <i>University of California, Los Angeles</i> ; Mona Jarrahi; <i>University of California, Los Angeles</i>	TH4H-2: Advances in SATCOM Phased Arrays Using Silicon Technologies Gabriel Rebeiz; <i>University of California at San Diego</i> ; Lee Paulsen; <i>Rockwell Collins, Inc.</i>	TH4I-2: A Quad-Core 28–32 GHz Transmit/Receive 5G Phased-Array IC With Flip-Chip Packaging in SiGe BiCMOS Kerim Kibaroglu; <i>University of California at San Diego</i> ; Mustafa Sayginer; <i>University of California at San Diego</i> ; Gabriel Rebeiz; <i>University of California at San Diego</i>	16:00-16:20
TH4F-3: Bandwidth-Reduced Supply Modulation of a High-Efficiency X-Band GaN MMIC PA for Multiple Wideband Signals Maxwell Duffy; <i>University of Colorado</i> ; Gregor Lasser; <i>University of Colorado</i> ; Jason Vance; <i>University of Colorado</i> ; Taylor Barton; <i>University of Colorado</i> ; Morten Olavsbråten; <i>Norwegian University of Science and Technology</i> ; Zoya Popovic; <i>University of Colorado</i>	TH4G-3: 100-GHz Integrated Photoreceiver Using Optical-to-Radio Converter and Enhancement Mode PHEMT Amplifier Driven by Photonic Power Supply Toshimasa Umezawa; <i>National Institute of Information and Communications Technology</i> ; Eiichi Hase; <i>Hitachi Kokusai Electric Inc.</i> ; Atsushi Kanno; <i>National Institute of Information and Communications Technology</i> ; Kouichi Akahane; <i>NICT</i> ; Atsushi Matsumoto; <i>NICT</i> ; Naokatsu Yamamoto; <i>NICT</i> ; Tetsuya Kawanishi; <i>Waseda University</i>	TH4H-3: GaN MMIC Active Arrays With Space Power Combination Nuno Carvalho; <i>Instituto De Telecomunicacoes</i> ; Pedro Cruz; <i>Instituto De Telecomunicacoes</i> ; Duc Pham-Minh; <i>Airbus S.A.S.</i> ; Wonhoon Jang; <i>Instituto De Telecomunicacoes</i> ; Steven Gao; <i>University of Kent</i> ; Qi Luo; <i>University of Kent</i> ; Konstantin Osipov; <i>Ferdinand-Braun-Institut</i> ; Hans-Joachim Würfl; <i>Ferdinand-Braun-Institut</i> ; Roger Vilaseca; <i>Tryo Aerospace</i> ; Rodolfo Martins; <i>Evoleo Technologies, Lda.</i> ; Costa Pinto; <i>EFACEC</i>	TH4I-3: mm-Wave Large-Scale Phased Array Based on Randomly Tiled Rectangular Sub-Arrays for 5G Communications Wen Yao Zhai; <i>Huawei Technologies Canada Research Center</i> ; Morris Repeta; <i>Huawei Technologies Canada Research Center</i> ; Wen Tong; <i>Huawei Technologies Canada Research Center</i> ; David Wessel; <i>Huawei Technologies Canada Research Center</i>	16:20-16:40
TH4F-4: An 80 MHz Modulation Bandwidth High Efficiency Multi-Band Envelope-Tracking Power Amplifier Using GaN Single-Phase Buck-Converter Shuichi Sakata; <i>Mitsubishi Electric Corporation</i> ; Sandro Lanfranco; <i>Nokia Bell Labs</i> ; Tapio Kolmonen; <i>Nokia</i> ; Olli Piirainen; <i>Nokia Bell Labs</i> ; Takanobu Fujiwara; <i>Mitsubishi Electric Corporation</i> ; Shintaro Shinjo; <i>Mitsubishi Electric Corporation</i> ; Peter Asbeck; <i>University of California at San Diego</i>	TH4G-4: High-Sensitivity, Broadband Terahertz Detectors Based on Plasmonic Nano-Antenna Arrays Neziha Yardimci; <i>University of California, Los Angeles</i> ; Mona Jarrahi; <i>University of California, Los Angeles</i>	TH4H-4: Spherical Reflectors for Space Based Telescopes Christopher Walker; <i>University of Arizona</i> ; Steve Smith; <i>Southwest Research Institute</i> ; Paul Goldsmith; <i>Jet Propulsion Laboratory</i>	TH4I-4: A Multilayer Organic Package With 64 Dual-Polarized Antennas for 28 GHz 5G Communication Xiaoxiong Gu; <i>IBM T.J. Watson Research Center</i> ; Duixian Liu; <i>IBM T.J. Watson Research Center</i> ; Christian Baks; <i>IBM T.J. Watson Research Center</i> ; Ola Tageman; <i>Ericsson</i> ; Bodhisatwa Sadhu; <i>IBM T.J. Watson Research Center</i> ; Joakim Hallin; <i>Ericsson</i> ; Leonard Rexberg; <i>Ericsson</i> ; Alberto Valdes-Garcia; <i>IBM T.J. Watson Research Center</i>	16:40-17:00

THURSDAY



WOMEN IN MICROWAVES PANEL SESSION: INSPIRING THE NEXT GENERATION OF WOMEN ENGINEERS



15:30–17:00 | Thursday, 8 June 2017
Hawai'i Convention Center: 313C



Organizers: Carolynn Kitamura, *Raytheon Space and Airborne Systems*;
Sasha Yamada, *University of Hawai'i at Mānoa*; Andy Pham, *Raytheon Space and Airborne Systems*

Abstract:

Find out what it takes to “make it” in this male-dominated occupation from some of the most successful women engineers in the microwave field. Each panelist will share their personal trials and tribulations (and perhaps their secrets to success) to encourage women of all ages to have a successful STEM career. All are welcome to swing by and be inspired!

Moderator:



Dr. Katherine Herrick

Raytheon

Favorite Inspirational Quote:

"Don't be intimidated by what you don't know. That can be your greatest strength and ensure that you do things differently from everyone else."

– Sara Blakely, Founder of Spanx

Panelists:



Dr. Wenquan Che

Nanjing University of Science and Technology

Favorite Inspirational Quote:

"If you love life, life will love you back."



Ms. Sherry Hess

AWR Group, National Instruments

Favorite Inspirational Quote:

"The future belongs to those who believe in the beauty of their dreams."

– Eleanor Roosevelt



Dr. Lorene Samoska

Jet Propulsion Laboratory, NASA

Favorite Inspirational Quote:

"What would you do if you weren't afraid to fail?"



Dr. Dimitra Psychogiou

University of Colorado Boulder



Dr. Olga Boric-Lubecke

University of Hawai'i at Mānoa

Favorite Inspirational Quote:

"Engineering is too important to be left to men."



WOMEN IN MICROWAVES NETWORKING RECEPTION



17:00–18:30 | Thursday, 8 June 2017
Hawai'i Convention Center, Ala Halawai Concourse

After the panel session, join us for this networking event to meet other women engineers and win raffle prizes! This is a great opportunity for attendees to connect with the WIM speakers and network with fellow women engineers in the RF and microwave industry. Don't miss this chance to unwind over some food and beverages while soaking in the Hawaiian sunset. Men, if you would like to attend, please don't forget to bring a female friend to this event.



We look forward to seeing you there!



THURSDAY