



Tuesday

Technical Sessions

13:20–15:00

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TU3A
Advances in RF Power Amplifier Technology
 Chair: Alina Moussessian
 Cochair: Yoshio Nikawa
HCC 311

TU3B
Hybrids and Couplers I
 Chair: Inder Bahl
 Cochair: John Owens
HCC 312

TU3D
Microwave Photonic Links
 Chair: Ed Rezek
 Cochair: Dalma Novak
HCC 316A

TU3E
Digital Microwave Architectures
 Chair: Johann F. Luy
 Cochair: Shoichi Narahashi
HCC 315

TU3F
Advances in CAD Techniques
 Chair: Arvind K. Sharma
 Cochair: Jose E. Rayas-Sanchez
HCC 314

TU3G: Special Session
Microwave/Millimeter-Wave Activities in the Pacific Rim
 Chair: Olga Boric-Lubecke
 Cochair: Koji Mizuno
HCC 317AB

13:20

TU3A-01: A Highly Efficient UHF Power Amplifier Using GaAs FETs for Space Applications
 A. Katz, The College of NJ, Ewing, USA; J. L. Martinetti, Lockheed Martin Commercial Space Systems, Newton, USA; M. J. Franco, Linearizer Technology Inc., Hamilton, USA

TU3B-01: Compact Rat-Race Hybrid Coupler Implemented Through Artificial Left-Handed and Right-Handed Lines
 G. Siso, J. Bonache, M. Gil, J. Garcia-Garcia, F. Martin, Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Valles), Spain

TU3D-01: Coherent Optical Receiver for Linear Optical Phase Demodulation
 L. A. Johansson, H. Chou, A. Ramaswamy, L. A. Coldren, J. E. Bowers, University of California, Santa Barbara, Santa Barbara, USA

TU3E-01: A Polar Delta-Sigma Modulation (PDSM) Scheme for High-Efficiency Wireless Transmitters
 Y. E. Wang, UCLA, Los Angeles, USA

TU3F-01: Moments Based Computation of Intermodulation Distortion of Mixer Circuits
 D. Tannir, R. Khazaka, McGill University, Montréal, Canada

TU3G-01: Research Advances on RF Technologies for 3G/B3G Mobile Communications
 H. Wei, J. Zhou, W. Jiang, H. Wang, J. Liu, X. Zhou, J. Zhao, L. Zhang, State Key Lab of Millimeter Waves, Nanjing, P. R. China

13:30

TU3A-02: Model for the Low-Frequency Performance of Ferrite-Loaded Balun Transformers
 F. H. Raab, Green Mountain Radio Research Co., Colchester, USA

TU3B-02: Miniaturized Branch-Line Coupler with Harmonic Suppression for RFID Applications using Artificial Transmission Lines
 C. Wang, T. Ma, C. Yang, National Taiwan University of Science and Technology, Taipei, Taiwan

TU3D-02: Signal-to-Noise Performance of Two Analog Photonic Links Using Different Noise Reduction Techniques
 E. I. Ackerman, G. E. Betts, W. K. Burns, C. H. Cox, J. L. Prince, M. D. Regan, H. V. Roussel, Photonic Sys., USA; J.C. Campbell, N. Duan, U. of Virginia, USA

TU3E-02: System Design Issues in a HQPM-Based Transmitter
 C. Li, T. Horng, National Sun Yat-Sen University, Kaohsiung, Taiwan; J. Jau, J. Li, Industrial Technology Research Institute, Hsinchu, Taiwan

TU3F-02: Real-Part Sufficiency and its Application to the Rational Function Fitting of Passive Electromagnetic Responses
 A. Y. Woo, A. C. Cangellaris, University of Illinois, Urbana, USA

TU3G-02: Microwave Activities in Taiwan
 R. Wu, H. Wang, C. Chen, National Taiwan University, Taipei, ROC; S. Chung, National Chiao Tung University, Hsin-Chu, ROC; C. Lu, Industrial Technology Research Institute, Hsin-Chu, ROC

13:50

TU3A-03: Open

TU3B-03: A New Miniaturized Type of Three-Dimensional SiGe 90° Hybrid Coupler at 20 GHz using The Meandering TFMS and Stripline Shunt Stub Loading
 K. Hettak, M. Stubbs, Communications Research Centre, Ottawa, Canada; G. Morin, Defence R&D Canada, Ottawa, Canada

TU3D-03: Link Characteristics for Optical Single-Sideband Modulation with Linearization Technique Incorporating RF Nonlinearity
 C. Lim, University of Melbourne, Australia; A. Nirmalathas, National ICT Australia, Victoria Research Lab, Melbourne, Australia; D. Novak, R. Waterhouse, Pharad, LLC, Glen Burnie, USA

TU3E-03: A Delta-Sigma-Digitized RF Transmitter
 J. Choi, J. Yim, J. Yang, J. Cha, B. Kim, Postech, Pohang, Republic of Korea; J. Kim, Handong Global University, Pohang, Republic of Korea

TU3F-03: Parallel Automatic Model Generation Technique for Microwave Modeling
 L. Zhang, Y. Cao, S. Wan, H. Kabir, Q. Zhang, Carleton University, Ottawa, Canada

TU3G-03: The Secure Satellite IP Network—SSATIN
 C. J. Cocks, T. M. Cox, P. Van Barn-eveld, P. A. Stimson, Defence Science Technology Organisation, Edinburgh, Australia; G. T. O'Shea, EJW Systems, West Lakes Shore, Australia

14:00

TU3A-04: Class-E Amplifier Design Equations for Maximizing the Frequency Utilization of a Device
 A. Mediano, P. Molina-Gaudo, C. Bernal, University of Zaragoza, Zaragoza, Spain

TU3B-04: A Compact Low-Loss Magic-T using Microstrip-Slotline Transitions
 K. U.-Yen, E. J. Wollack, S. H. Moseley, NASA, Greenbelt, USA; J. Papapolymerou, J. Laskar, Georgia Institute of Technology, Atlanta, USA

TU3D-04: Dualband LTCC-Based Wireless Transceiver with Optical Interface using Polymer Fiber
 L. Pergola, R. Vahldieck, ETH Zürich, Zürich, Switzerland; M. Buelters, R. Gindera, I. Moellers, D. Jaeger, Universität Duisburg-Essen, Duisburg, Germany

TU3E-04: A New DC-Offset and I/Q-Mismatch Compensation Technique for a CMOS Direct-Conversion WLAN Transmitter
 K. Yanagisawa, N. Matsuno, T. Maeda, S. Tanaka, NEC Corp., Kawasaki, Japan

TU3F-04: Coarse and Surrogate Model Assessment for Engineering Design Optimization with Space Mapping
 S. Koziel, McMaster University, Hamilton, Canada; J. W. Bandler, Bandler Corp., Dundas, Canada

TU3G-04: Millimeter-Wave Activities in Japan
 K. Araki, Tokyo Institute of Technology, Tokyo, Japan

14:10

TU3A-05: UHF-Band Long-Pulse Radar Power Amplifiers using Push-Pull and Balanced Configurations
 J. Park, J. Burger, J. Titzian, Integra Technologies Inc., El Segundo, USA

TU3B-05: A New Six-Port Circuit Architecture using Only Power Dividers/Combiners
 L. Gerardi, M. Bozzi, L. Perreggini, University of Pavia, Pavia, Italy; Y. Xu, Y. Zhao, K. Wu, R.G. Bosisio, École Polytechnique de Montréal, Montréal, Canada

TU3D-05: 1.25 Gbps Optical Data Channel Up-Conversion in 20 GHz-Band via a Frequency-Doubling Optoelectronic Oscillator for Radio-Over-Fiber Systems
 M. Shin, P. Kumar, Northwestern University, Evanston, USA

TU3E-05: Reduction of Six-Port Calibration to Linear Equalization
 T. Eireiner, Q. Lu, T. Muller, Daimler-Chrysler Research and Technology, Ulm, Germany; M. Wetz, C. Pietsch, I. Perisa, University of Ulm, Ulm, Germany

TU3F-05: EM-Based Space Mapping Optimization of Left-Handed Coplanar Waveguide Filters with Split-Ring Resonators
 L. J. Rogla, V. E. Boria, J. Carbonell, Univ. Politècnica de Valencia, Spain; J. E. Rayas-Sanchez, Inst. Tec., Tlaquepaque, Mexico

TU3G-06: Optimal Synthesis for Multiband Microwave Filters
 V. Lunot, F. Seyfert, INRIA, Sophia Antipolis, France; S. Bila, XLIM, Limoges, France

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TU3A-06: Class-E Silicon Carbide VHF Power Amplifier
 M. J. Franco, Linearizer Technology Inc., Hamilton, USA; A. Katz, The College of New Jersey, Ewing, USA

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Tuesday

Technical Sessions

15:30–17:10

TU4A: Advanced Techniques for Wireless Power Amplifier Efficiency and Linearity Enhancement
 Chair: Chuck Weitzel
 Cochair: Vikram Krishnamurthy
HCC 311

TU4B Hybrids and Couplers II
 Chair: Peter Russer
 Cochair: Guiseppe Macchiarella
HCC 312

TU4C: Multi-GHz Circuits and Systems for Communication and Instrumentation
 Chair: A. Konczykowska
 Cochair: Koichi Murata
HCC 316B

TU4D Microwave Photonic Devices
 Chair: Dieter Jaeger
 Cochair: Asher Madjar
HCC 316A

TU4A-01: A Gated Envelope Feedback Technique for Automatic Hardware Conditioning of RFIC PAs at Low Power Levels
 N. G. Constantin, M. N. El-Gamal, McGill University, Montréal, Canada; P.J. Zampardi, Skyworks Solutions Inc., Newbury Park, USA

TU4B-01: Miniaturized Rat-Race Coupler with Microstrip-to-CPW Broadside-Coupled Structure and Stepped-Impedance Sections
 J. Kuo, Y. Chiou, J. Wu, National Chiao Tung University, Hsinchu, Taiwan

TU4C-01: An 18 GHz Bandwidth, 60 GS/s Sample Rate Real-Time Waveform Digitizing System
 P. J. Pupalakis, LeCroy Corp., Chestnut Ridge, USA

TU4D-01: All-Dielectric Wireless Receiver
 R. C. Hsu, A. Ayazi, B. Houshmand, B. Jalali, University of California Los Angeles, Los Angeles, USA

TU4A-02: Design Approach for Realization of Very High-Efficiency Power Amplifiers
 C. Roff, J. Benedikt, P. J. Tasker, Cardiff University, Cardiff, UK

TU4B-02: Multilayer Multisection Broadband LTCC Stripline Directional Couplers
 M. M. Fahmi, K. A. Zaki, University of Maryland, College Park, USA; J. A. Ruiz-Cruz, Universidad Autónoma de Madrid, Madrid, Spain; A. J. Piloto, Kyocera America, San Diego, USA

TU4C-02: Antenna-Based Signal Processor Using Reconfigurable Receiver
 L. Zhou, A. S. Daryoush, Drexel University, Philadelphia, USA

TU4D-02: Traveling-Wave Spatial Quantized Analog-to-Digital Conversion
 M. Jarrahi, T. H. Lee, Stanford University, Stanford, USA

TU4A-03: A Novel High Efficiency and Linearity Power Amplifier with Over-Voltage Protection
 H. Zhang, TriQuint Semiconductor, Chelmsford, USA; H. Gao, G. Li, University of California Irvine, Irvine, USA; Y. Ma, Rockwell Scientific Co., Thousand Oaks, USA

TU4B-03: Design of Dualband Microstrip Rat Race Coupler with Circuit Miniaturization
 C. Hsu, C. Chang, J. Kuo, National Chiao Tung University, Hsinchu, Taiwan

TU4C-03: A Novel Analog Decision-Feedback Equalizer for 10 Gb/s Multimode Fiber Dispersion Compensation
 S. Chandramouli, F. Bien, H. Kim, E. Gebara, J. Laskar, C. Scholz, Georgia Electronic Design Center, Georgia Institute of Technology, Atlanta, USA

TU4D-03: 2nd Order Distortion Cancellation in Photonic Time Stretch Analog-to-Digital Converter
 S. Gupta, B. Jalali, University of California Los Angeles, Los Angeles, USA

TU4A-04: An HBT 4-Cell Monolithic Stacked Power Amplifier
 Z. Tsai, M. Lei, H. Wang, National Taiwan University, Taipei, ROC

TU4B-04: Low Insertion Loss Broadside Coupler in a Multilayer Above-IC Technology for K-Band Applications
 N. Do, D. Dubuc, K. Grenier, R. Plana, Laas CNRS, Toulouse, France

TU4C-04: Electrical Dispersion Compensator for a Gigabit Passive Optical Network System with Fabry-Perot Laser
 H. Kim, F. Bien, S. Chandramouli, J. de Ginstous, C. Scholz, E. Gebara, J. Laskar, Georgia Institute of Technology, Atlanta, USA

TU4D-04: CMOS-Compatible 60 GHz Harmonic Optoelectronic Mixer
 H. Kang, W. Choi, Yonsei University, Seoul, Korea

TU4A-05: Distributed Amplifier with Narrowband Amplifier Efficiency
 S. A. Olson, B. M. Thompson, B. E. Stengel, Motorola, Plantation, USA

TU4B-05: A Software-Configurable Coupler with Programmable Coupling Coefficient
 S. Wang, Industrial Technology Research Institute, Chutung, Taiwan, ROC; C. Chang, National Chiao-Tung University, Hsinchu, Taiwan, ROC; J. Lin, University of Florida, Gainesville, USA

TU4C-05: A 2 Gb/s Delta-Sigma Directly Driven Wireless Link
 Q. Mu, L. Sankey, Z. Popovi, University of Colorado, Boulder, USA

TU4D-05: Optically Injection-Locked Self-Oscillating HBT MMIC Optoelectronic Mixer for Bidirectional Fiber-Fed Wireless Links
 J. Kim, W. Choi, Yonsei University, Seoul, Korea; H. Kamitsuna, M. Ida, K. Kurishima, NTT Corp., Atsugi-shi, Japan

TU4A-06: Single-Chip Dual-Mode Power Amplifier MMIC using GaAs E-pHEMT for WiMAX/WLAN Applications
 Y. Hsu, S. Wang, C. Chen, Industrial Technology Research Institute, Hsinchu, Taiwan; W. Ho, C. Lin, WIN Semiconductors Corp., Tao Yuan, Taiwan

TU4B-06: Novel Substrate Integrated Waveguide Fixed Phase Shifter for 180° Directional Coupler
 C. Yujian, H. Wei, State Key Lab of Millimeter Waves, Nanjing, China; W. Ke, Poly-Grames Research Center, Montréal, Canada

TU4C-06: Odd Phase Switching Prescaler Based on Injection-Locked Frequency Divider
 X. Yan, X. Yu, Zhejiang University, Hangzhou, P.R. China; M. Do, W. Lim, K. Yeo, Nanyang Tech. Univ., Singapore, Singapore

TU4D-06: Optimization of Optical Delay Lines based on Photonic Crystal Coupled Cavity Waveguides
 A. Gujjula, J. Sabarinathan, University of Western Ontario, London, Canada

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15:30–17:10

TU4E Advanced Components for Wireless Systems
 Chair: Bernard D. Geller
 Cochair: Chang-Ho Lee
HCC 315

TU4F Applied Frequency Domain Techniques
 Chair: Abbas Omar
 Cochair: Luca Perregrini
HCC 314

TU4G: Special Session A Tribute to Dr. Leo Young
 Chair: Robert J. Trew
HCC 317A, B

TU4E-01: Ultralinear Dualband WLAN Front-End Module for 802.11a/b/g/n Applications with Wide Voltage and Temperature Range Operation
 C. P. Huang, C. Masse, C. Zelley, C. Christmas, T. Ted Whittaker, J. Soricelli, W. Vaillancourt, A. Parolin, SiGe Semi., Methuen, USA

TU4F-01: Short-Open Calibration Technique for Field-Theory-Based Parametric Extraction of Planar Discontinuities with Nonuniform Feed Lines
 S. Sun, L. Zhu, Nanyang Technological University, Singapore, Singapore

TU4G-01: A Tribute to Dr. Leo Young
 R. Trew, North Carolina State University, Raleigh, USA

TU4E-02: A Complete Antenna-to-CMOS 4x6 mm Front End Module for Dualband 802.11abgn WLAN
 H. T. Morkner, M. Vice, M. Karakucuk, W. Abey, L. D. Nguyen, J. F. Kessler, G. Carr, Avago Technologies, San Jose, USA

TU4F-02: A New SCN-based Frequency-Domain TLM Node and its Applications with the Diakoptic Method
 K. Sung, Z. D. Chen, Dalhousie University, Halifax, Canada

Dr. Leo Young passed away at the age of 80 in September 2006. He pioneered the development of microwave filter technology, publishing 14 books and over 100 technical articles, and receiving 20 patents on various aspects of microwave technology. In 1964 together with his colleagues, George Matthaei and E.M.T. Jones, Leo wrote *Microwave Filters, Impedance-Matching Networks, and Coupling Structures*, included in the Microwave Hall of Fame and generally considered "the bible" for microwave filter design. Leo's extensive professional activities included serving as President of the IEEE and the MTT-S. He received numerous awards, including the Microwave Prize, Distinguished Service Award, and the Microwave Career Award. Leo was a Life Fellow of IEEE, a member of the National Academy of Engineering, and a Foreign Member of the UK Royal Academy of Engineering. Leo was the U.S. DoD's Director of Research and established many of its policies and programs that define support for basic research.

TU4F-03: A Nondisjoint Hexahedral Space Discretization for the Finite-Volume Technique
 K. Krohne, R. Vahldieck, ETH Zürich, Zürich, Switzerland

TU4E-03: Coexistence of an Electronically Tunable DVB-H Antenna with the GSM Transmitter in a Mobile Phone
 L. Huang, W. L. Schroeder, BenQ Mobile, Kamp-Lintfort, Germany; P. Russer, Technische Universität München, Munich, Germany

TU4F-04: Fully Automatic HP Adaptivity for Electromagnetics, Application to the Analysis of H-Plane and E-Plane Rectangular Waveguide Discontinuities
 L. E. Garcia-Castillo, Univ. Carlos III de Madrid, Leganes, Spain; L. F. Demkowicz, D. Pardo-Zubiaur, Univ. of Texas, Austin, USA

TU4E-04: A Compact Triband PIFA with Multiple-Folded Parasitic Elements
 D. Kim, J. Lee, C. Cho, Hankuk Aviation University, Goyang, Korea, South; J. Kim, Information and Communications University, Taejon, South Korea

TU4F-05: An Incremental Fullwave EM Simulator for RF and Microwave Design
 F. Ling, W. Harris, X. Wang, A. Dengi, Cadence Design Systems, Tempe, USA

TU4E-05: Complementary Bipolar Devices for Base Station Applications
 E. Tiiliharju, Microelectronics Lab, Turku, Finland; H. Pellikka, Nokia Mobile Phones, Salo, Finland

TU4F-06: Optimizing the FDFD Method in Order to Minimize PML-Related Numerical Problems
 P. K. Talukder, F. Schmucke, W. Heinrich, FBH, Berlin, Germany; R. Schlundt, WIAS, Berlin, Germany