Automatic RF Techniques Group

88th ARFTG Microwave Measurement Conference

Austin, Texas

TECHNICAL AGENDA

Thursday, December 8

0800 to 0810 **Welcome**

Conference Chair: Jon Martens, Anritsu

0810 to 0930 **Session A: Design and Measurement for Wireless Applications**

Session Chair: Jon Martens, Anritsu

ThA-1 INVITED: Bringing Envelope Tracking to the Market: A Product and Metrology Development Perspective

0810-0850 P. Draxler, H. Masaracioglu, Qualcomm, San Diego, United States

ThA-2 Measurement of Dynamic Power Dissipation and Estimation of Effective Dynamic Efficiencies in an LTE Chireix PA

0850-0910 J. A. Galaviz-Aguilar[1,2], H. Chang[1], F. J. Martinez-Rodriguez[3,1], P. Roblin[1], J. C. Nunez Perez[2], [1]The Ohio State University, Columbus, United States, [2]Instituto Politecnico Nacional, IPN-CITEDI, Tijuana, Mexico, [3]National University of Mexico, Ciudad de México, United States

ThA-3 Radiated Power Based on Wave Parameters at Millimeter-wave Frequencies for Integrated Wireless Devices

0910-0930 D. Senic[1], K. A. Remley[1], D. F. Williams[1], D. C. Ribeiro[2], C. Wang[1], C. L. Holloway[1], [1]National Institute of Standards and Technology, Boulder, United States, [2]University of Aveiro, Aveiro, Portugal

0930 to 1100 **Break – Exhibits and Interactive Forum**

Session Chair: Ron Ginley, NIST

ThP-01 Lumped modeling of integrated MIM capacitors for RF applications

F. Korndörfer[1], V. Mühlhaus[2], [1]IHP GmbH, Frankfurt (Oder), Germany, [2]Dr. Mühlhaus Consulting & Software GmbH, Witten, Germany

ThP-02 Design of WR-6 (110GHz ~ 170GHz) Waveguide Microcalorimeter

W. Yuan, C. Ma, X. Cui, Y. Li, National Institute of Metrology, Beijing, China

ThP-03 CAD-Assisted Microwave Characterization of Ink-Jet Printed CPW on PET Substrates

A. Sahu[1], V. Devabhaktuni[1], A. Lewandowski[2], T. M. Wallis[3], P. H. Aaen[4], [1]University of Toledo, Toledo, United States, [2]Warsaw University of Technology, Warsaw, Poland, [3]National Institute of Standards and Technology, Boulder, United States, [4]Unversity of Surrey, Surrey, United Kingdom

ThP-04 Digitally Assisted Analog Predistortion Technique for Power Amplifier

K. Gumber, P. Jaraut, M. Rawat, Indian Institute of Technology Roorkee, Roorkee, India

ThP-05 Wideband Impedance-varying N-way Wilkinson Power Divider/Combiner for RF Power Amplifiers

O. I. Hussein[1], K. A. Al shamaileh[2], V. K. Devabhaktuni[1], P. H. Aaen[3], [1]University of Toledo, Toledo, United States, [2]Purdue University Northwest, Hammond, United States, [3]University of Surrey, Guildford, United Kingdom

1100 to 1200 **Session B: On-wafer Measurements**

Session Chair: Jeff Jargon, NIST

ThB-1 Development of a Reference Wafer for On-Wafer Testing of Extreme Impedance Devices

1100-1120 H. Votsi[1,3], I. Roch-Jeune[2], K. Haddadi[2], C. Li[3], G. Dambrine[2], P. Aaen[1], N. Ridler[3], [1]University of Surrey, Guildford, United Kingdom, [2]University of Lille, Lille, France, [3]National Physical Laboratory, Teddington, United Kingdom

ThB-2 The Impact of ENR and Coaxial Calibration in Accurate On-Wafer Noise Parameter Testing for Ultra-Low Noise Devices

1120-1140 K. C. Kellogg[1], L. Dunleavy[1], S. Skidmore[1], G. Simpson[2], [1]Modelithics, Inc., Tampa, United States, [2]Maury Microwave Corporation, Ontario, United States

ThB-3 Fused Silica based RSOL calibration substrate for improved probe-level calibration accuracy

1140-1200 L. Galatro, M. Spirito, Delft University of Technology, Delft, Netherlands

1200 to 1300 **Lunch**

1300 to 1320 **ARFTG Business Meeting Part 1**

1320 to 1420 **Session C: Frontiers of Microwave Measurements**

Session Chair: Mohamed Sayed, MMS

ThC-1 INVITED: Multiphysics Characterization – More Than Just Microwaves

1320-1400 P. Aaen and N. Ridler, n3m-labs, University of Surrey, United Kingdom and the National Physical Laboratory, United Kingdom

ThC-2 Kicking the Tires of the NIST Microwave Uncertainty Framework

1400-1420 R. Ginley, NIST, Boulder, United States

1420 to 1425 **ARFTG Business Meeting Part 2**

1425 to 1600 **Break – Exhibits and Continuation of the Interactive Forum**

Session Chair: Ron Ginley, NIST

1600 to 1700 **Session D: mm-Wave and Terahertz Measurements**
Session Chair: Dave Blackham, Keysight

ThD-1 Power Level Control of mm-Wave Test Benches for Accurate Small and Large-signal DUT Measurements

1600-1620 C. De Martino, Z. Hu, L. Galatro, G. Sarris, M. Spirito, Delft University of Technology, Delft, Netherlands

ThD-2 Spectral Characterization of Linear Isotropic and Anisotropic Dielectric Materials Using Terahertz Measurement Systems

1620-1640 J. M. Seligman[1,1], C. C. Green[2,2], B. K. Sternberg[1,1], C. K. Walker[1,1], [1]University of Arizona, Tuscon, United States, [2]Rogers Corporation, Chandler, United States

ThD-3 Performance Evaluations of Dielectric Waveguide for Millimeter-wave On-Wafer Measurements

1640-1700 M. Horibe, R. Sakamaki, Y. Kato, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan

Friday, December 9

0800 to 0900 **Session E: Power Amplifiers**
Session Chair: Peter Aaen, U. of Surrey

FrE-1 INVITED: Supply modulation for power amplifier efficiency enhancement

0800-0840 Z. Popovic, U. of Colorado, Boulder, United States

FrE-2 Cross-correlation measurement method of Error Vector Magnitude and application to power amplifier non-linearity performances

0840-0900 J. Sombrin[1,2], [1]TESA Laboratory, Toulouse, France, [2]Labex Sigma-Lim, Limoges, France

0900 to 1040 **Break – Exhibits**

1040 to 1140 **Session F: Transmission Lines and Nonlinear Measurements**
Session Chair: Mitch Wallis, NIST

FrF-1 A Simple Method for Transmission Lines Quality Control

1040-1100 A. A. Savin[1,2], V. G. Guba[2], O. N. Bykova[2], A. Rumiantsev[3], [1]Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russian Federation, [2]NPK Tair, Tomsk, Russian Federation, [3]MPI Corporation, Chu-Pei, Taiwan

FrF-2 Uncertainty of Parameter Estimation in Equivalent Circuit Model of Gallium Nitride Diode for Rectifier Design at 5.8 GHz

1100-1120 R. Kishikawa[1,2], M. Horibe[1], S. Kawasaki[3,2], [1]National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, [2]The Graduate University for Advanced Studies, Sagamihara, Japan, [3]Japan Aerospace Exploration Agency,

Sagamihara, Japan

FrF-3 **Linearity characterization of RF circuits through an Unequally Spaced Multi Tone signal**

1120-1140

S. Laurent[1], J.-P. Teyssier[2], R. Quéré[1], J. Sombrin[3], M. Prigent[1], [1]XLIM, Brive La Gaillarde, France, [2]Keysight, Santa Rosa, United States, [3]XLIM, Limoges, France

1200 to 1300 **Lunch**

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