



Automatic RF Techniques Group

76th ARFTG Microwave Measurement Symposium

Clearwater Beach Marriott Suites on Sand Key in Clearwater, Florida

TECHNICAL AGENDA

Thursday, 2 December 2010

08:30 to 08:40 **Welcome and Introduction**

08:40 to 10:00 **Session A: mm-wave waveguide calibrations and metrology**

Session Chair: Jon Martens, Anritsu Company

Traceability to National Standards for S-parameter Measurements in Waveguide at Frequencies from 140 GHz to 220 GHz

N. Ridler¹, R. Clarke², M. Salter¹, A. Wilson¹, ¹National Physical Laboratory, Teddington, United Kingdom, ²University of Leeds, Leeds, United Kingdom

Complete Characterization of Rectangular Waveguide Measurement Standards for Vector Network Analyzer in the range of Millimeter and Sub-millimeter wave frequencies

M. Horibe, R. Kishikawa, M. Shida, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan

Understanding the residual waveguide interface variations on millimeter wave calibration

Y. Lau, OML Inc., Morgan Hill, United States

Rectangular-Waveguide Vector-Network-Analyzer Calibrations With Imperfect Test Ports

D. F. Williams, NIST, Boulder, United States

10:10 to 10:50 **Break**

10:50 to 11:50 **Session B: On-wafer calibrations**

Session Chair: Nick Ridler, NPL

Modal Calibration of GSSG Probes

L. Hayden, Cascade Microtech, Inc., Beaverton, United States

Improving on-wafer measurements with membrane-technology-based calibration standards

U. Arz¹, M. Rohland¹, S. Buttgenbach², ¹Physikalisch-Technische Bundesanstalt, Braunschweig, Germany, ²Institut für Mikrosystemtechnik, Braunschweig, Germany

Broadband Measurements of Nanofiber Devices: Repeatability and Random Error Analysis

T. M. Wallis¹, A. Imtiaz¹, S. Lim¹, P. Kabos¹, K. Kim², P. Rice², D. S. Filipovic², ¹National Institute of Standards and Technology, Boulder, United States, ²University of Colorado, Boulder, United States

11:50 to 13:30 **Lunch**

13:30 to 14:30 **Session C: Linear measurement**
Session Chair: Leonard Hayden, Cascade Microtech

Through-Wafer Via Modeling Based on Direct RF Characterization
M. D. Brunsman, TriQuint Semiconductor, Hillsboro, United States

Calculation of Maximal Applicable Gain for the Generalized and the Direct Method for Extreme Impedances Measurement
M. Randus, K. Hoffmann, Czech Technical University in Prague, Prague, Czech Republic

Noise Figure and S-Parameter Measurement Setups for On-Wafer Differential 60GHz Circuits
P. Sakian, E. Janssen, R. Mahmoudi, A. van Roermund, Eindhoven University of Technology, Eindhoven, Netherlands

14:30 to 15:10 **ARFTG Meeting and Election of Executive Committee Members**

15:10 to 16:00 **Session P: Open Forum**
Session Chair: Ron Ginley, NIST

Measurement of Micromachined Submillimeter Waveguide Circuits
X. Shang¹, M. J. Lancaster², M. Ke³, Y. Wang⁴, ¹the University of Birmingham, Birmingham, United Kingdom, ²the University of Birmingham, Birmingham, United Kingdom, ³the University of Birmingham, Birmingham, United Kingdom, ⁴the University of Birmingham, Birmingham, United Kingdom

Receiver Noise Calibration for a Vector Network Analyzer
N. Otegi¹, J. Collantes¹, M. Sayed², ¹University of the Basque Country (UPV/EHU), Bilbao, Spain, ²Microwave&MillimeterWave Solutions, Santa Rosa, United States

A New Accurate Shielded Coaxial Open as High Frequency Impedance Standard
H. Huang¹, X. Liu¹, Y. B. Lee², ¹National Institute of Metrology, China, Beijing, China, ²Anritsu Company, Morgan Hill, United States

Multimode Characterization of Parallel Plate Waveguide
J. A. Higgins, F. Kernan, B. Pejcinovic, Portland State University, Portland, United States

16:00 to 17:00 **Session D: On-wafer and fixtured applications**
Session Chair: Kate Remley, NIST

PCB Manufacturing Variation Impact on High Frequency Measurement Fixtures
E. M. Fledell, B. Grossman, Intel Corporation, Hillsboro, United States

Calibration Accuracy of a 625 GHz On-wafer Probe
T. J. Reck, L. Chen, C. Zhang, A. Arsenovic, A. Lichtenberger, R. M. Weikle, II, N. S. Barker, University of Virginia, Charlottesville, United States

A Process to Reduce Reproducibility Error in VNA Measurements
J. M. Peterson, B. Grossman, Intel Corporation, Hillsboro, United States

Friday, 4 December 2009

08:40 to 09:40

Session E: mm-wave methods

Session Chair: Uwe Arz, PTB

Characterization and Validation of Coaxial Open-circuit Primary Standards for Millimeter-wave Vector Network Analyzer Calibration

M. Horibe¹, N. Ridler², C. Eio², M. Salter², ¹National Metrology Institute of Japan (NMIJ), Tsukuba, Japan, ²National Physical Laboratory (NPL), Teddington, United Kingdom

Comparison of 1.85mm Line Reflect Line and Offset Short Calibration

J. P. Hoffmann, J. Ruefenacht, M. Wollensack, M. Zeier, METAS, Bern-Wabern, Switzerland

An Improved Ring-Centered Waveguide Flange for Millimeter- and Submillimeter-Wave Applications

H. Li¹, A. R. Kerr², J. L. Hesler³, G. Wu¹, Q. Yu¹, N. S. Barker¹, R. M. Weikle¹, ¹University of Virginia, Charlottesville, United States, ²National Radio Astronomy Observatory (NRAO), Charlottesville, United States, ³Virginia Diodes, Inc., Charlottesville, United States

09:40 to 10:50

Break

10:50 to 11:50

Session F: Nonlinear measurement

Session Chair: Mitch Wallis, NIST

Representing Bias-Network Baseband Characteristics when Simulating Intermodulation Distortion

C. Olsen¹, S. L. Sweeney¹, K. A. Remley², ¹IBM, Hopewell Jct., United States, ²NIST, Boulder, United States

A De-embedding Procedure Oriented to the Determination of FET Intrinsic I-V Characteristics from High-Frequency Large-Signal Measurements

G. Avolio¹, D. Schreurs¹, A. Raffo², G. Vannini², ¹K.U.Leuven, Leuven (Heverlee), Belgium, ²University of Ferrara, Ferrara, Italy

Load-Impedance Dependence of Self-Heating Effects in Nonlinear Transistor Measurement and Operation

C. P. Baylis, B. R. Jean, J. Martin, L. Wang, M. Moldovan, H. Miller, Baylor University, Waco, United States



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