

Invitation to Attend

Millimeter-Wave Applications

In conjunction with the International Microwave Symposium, the Automatic RF Techniques Group will hold its 65th Microwave Measurement Conference at the Renaissance Long Beach Hotel, Long Beach, California on Friday June 17, 2005. The conference will include technical presentations, an interactive forum, and an exhibition; all to give you ample opportunity to interact with your colleagues in the automated RF and microwave test community.

The conference theme is "Measurements for Millimeter-Wave Applications" with papers focusing on measurements for point-to-point communications, line-of-sight systems, automotive radar, differential measurements, traceability to national standards laboratories, models for measurement verification, vector network analysis, large-signal network analysis, power and noise including on-wafer measurements.

Also, be sure to check for our joint ARFTG/IMS workshops earlier in the week. This year ARFTG is co-sponsoring two joint IMS/ARFTG workshops: "On-wafer Microwave Measurement: State of the Art and Future Directions" and "High Frequency Digital Backplane Interconnect Characterization and Design."

An important part of any ARFTG Conference is the opportunity to interact one-on-one with colleagues, experts, and vendors in the RF and microwave test and measurement community. Whether your interests include high-throughput production or one-of-a-kind metrology measurements, complex systems or simple circuit modeling, small-signal S-parameter or large-signal non-linear measurements, phase noise or noise figure, DC or light-wave, you will find an interested party and most likely an expert. Starting with the continental breakfast in the exhibition area, continuing through the two exhibition/interactive forum sessions and the luncheon, there will be ample opportunity for discussion with others facing similar challenges. You, along with the other attendees, may find that these interactions are often the best source of ideas and information for your current projects. So come and join us. You'll find that the atmosphere is informal and friendly.

ARFTG LSNA Users' Forum

The ARFTG LSNA Users' Forum will be held Thursday afternoon from 5 to 7 PM, room TBA. This informal discussion group is devoted to sharing information and issues related to instrumentation utilized in vector large-signal network analysis of microwave circuits and systems. Topics include: Large-signal measurements utilizing nonlinear vector network analyzers (NVNAs), e.g. Microwave Transition Analyzers (MTAs) and Large-Signal Network Analyzers (LSNAs), NVNA measurements in conjunction with loadpull, sampling oscilloscopes, vector signal analyzers, and other test equipment used to perform large-signal measurements. To present or for more information, please contact Dominique Schreurs: Dominique.Schreurs@esat.kuleuven.ac.be or Kate Remley: remley@boulder.nist.gov. All are welcome!

Technical Agenda Selections

- Towards generic calibration *P.S. Blockley¹, and J.G. Rathmell²* (¹Macquarie University, Sydney; ²University of Sydney, Australia)
- A simple calibration algorithm for partially leaky model multiport vector network analysers *V. Teppati, A. Ferrero, D. Parenza and U. Pisani* (Politecnico di Torino, Torino, Italy)
- Improved multimode calibration standards for 40 GHz measurements of active devices *T. Büber¹, A. Rodríguez², L.P. Dunleavy², N. Kinayman³, I. Gresham³ and J.P. Lanteri³* (¹Syracuse University, ²University of South Florida, ³MA-COM Inc, Lowell)
- Verification of the wafer-level LRM+ calibration technique for GaAs applications up to 110 GHz *R. Doerner¹ and A. Rumiantsev²* (¹Ferdinand-Braun-Institut fuer Hoechstfrequenztechnik, Berlin, ²SUSS MicroTec Test Systems GmbH, Sacka, Germany)
- Millimeter-wave tests and instrumentation *M. Sayed* (Microwave and Millimeter Wave Solutions, Santa Rosa)
- Simplified broadband mm-wave pulsed VNA profiling measurements *J. Martens and P. Kapetanovic* (Anritsu Company, Morgan Hill)
- Measurement accuracy of the Anritsu 76 GHz radar test system ME7220A *Y-S. Lee and R. Abou-Jaoude* (Anritsu Company, Morgan Hill)
- Measuring the on-wafer noise figure of a W-band LNA – an application *J.G. Burns, H. Fudem and M.R. Murphy* (Northrop Grumman Corporation, Linthicum)

• Exploration of power amplifier performance using newly developed digital demodulation loadpull measurement *J. Liu, L.P. Dunleavy and H. Arslan* (University of South Florida)

• An improved coupling method for time-domain load-pull measurements *F. DeGroot¹, J. Verspecht², C. Tsironis³, D. Barataud¹, J-P. Teyssier¹* (¹University of Limoges, Brive, France, ²Jan Verspecht bvba, Steenhuffel, Belgium, ³Focus Microwaves, Quebec, Canada)

• Three-port RF characterization of MOS transistors *U. Mahalingam^{1,2}, S.C. Rustagi¹ and G.S. Samudra²* (¹Institute of Microelectronics, Singapore, ²National University of Singapore)

• Pulsed-IV pulsed-RF measurements using a large-signal network analyzer *S.J. Doo¹, P. Roblin¹, S. Lee¹ and M. Vanden Bossche²* (¹Ohio State University, ²NMDG)

• A preliminary study of different metrics for the validation of device and behavioural models *M. Pirazzini¹, G. Fernández², A. Alabadelah³, G. Vannini¹, M. Barciela², E. Sánchez² and D. Schreurs³* (¹University of Ferrara, Ferrara, Italy, ²University of Vigo, Vigo, Spain, ³KU Leuven, Leuven, Belgium)

• On peculiarities of S-parameter measurements *Y. Rolain and W. Van Moer* (Vrije Universiteit Brussel, Brussels, Belgium)

• A phasor angle definition suitable for intermodulation measurements *G. Loglio¹, J. Jargon² and D.C. DeGroot²* (¹Universita' degli Studi de Firenze, Firenze, Italy, ²NIST, Boulder)

Interactive Forum Papers

Improved Y factor noise measurement using the second stage contribution to advantage; Using of transfer switches in different configurations between custom switch relay boxes and VNAs; Wideband characterization of silicon rich nitride (SiRN)-based transmission lines; Analysis of results in complex-valued intercomparisons; The measurement of the characteristic impedance of transmission lines using nanoscale resistive films; MPT, a Universal Multi-Purpose Tuner; Assembly influence on S-parameters of packaged transistor and its modelling using electromagnetic field simulator; Assembly influence on S-parameters of packaged transistor and its modelling using electromagnetic field simulator; Simple broadband relative phase measurement of intermodulation products; A RF power amplifier modelled with a simple fifth order polynomial extracted from basic characterizations; Thermal resistance measurement of a GaN HEMT with trapping effects; Automated IPX characterization systems; 7 state PTP for Vector Network Analyzer; Small-signal operation-based simplified verification of non-linear models for millimetre-wave electron devices; Testing the dynamic accuracy of the vector network analyser using the 40 GHz step attenuator; Line-attenuator-line: an alternative method for in-fixture calibration; Phase noise effects in sampling microwave measurement systems; A study on electrical design, modelling and validation methods for 1st and 2nd level high-speed interconnects; Wide-bandwidth vector-corrected measurement with high spurious free dynamic range; Automated calibration of noise figure measurement path of low noise RF receiver

Pre-Registration

Includes conference sessions, breakfast, lunch, exhibition, ARFTG membership, and ARFTG digest.

IEEE or ARFTG Members: \$180*
Nonmembers: \$280*
Students, Retirees: \$120*

Registration information can be found on line at: WWW.IMS2005.org. *Pre-registration rates

ARFTG CD-ROM

Complete collection of conference digests spanning 1982-2001

ARFTG Members: \$65 Nonmembers: \$90

Purchase at the conference or at www.arftg.org

Schedule of Events

Joint Workshops : "On-Wafer Microwave Measurement: State of the Art and Future..."	Sunday, June 12 WSI 1 – 5 pm
"High Frequency Digital Backplane Interconnect Characterization..."	Monday, June 13 WMH 8 am – Noon
LSNA Users' Forum	Thursday, June 16 5 – 7 pm
ARFTG Microwave Measurement Conference	Friday, June 17 Renaissance Long Beach Hotel
•Continental Breakfast	7 – 8 am
•Conference AM Sessions	8 am – 12 noon
•Conference PM Sessions	1:30 – 5 pm
•Luncheon	12 noon -- 1:30 pm
•Exhibition and Interactive Forum	7 am – 4 pm

Conference Chair

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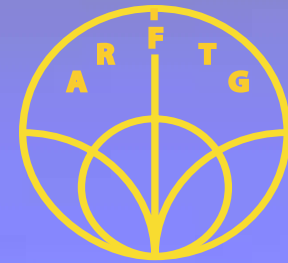
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To register:

www.ims2005.org



65th ARFTG Microwave Measurement Conference

Millimeter-Wave Applications

**Renaissance Long Beach
Hotel**

111 East Ocean Blvd.

**Long Beach, CA
June 17, 2005**