



AUTOMATIC RF TECHNIQUES GROUP

NEWSLETTER

SUMMER 2010

NUMBER 43

75th ARFTG Microwave Measurement Conference: “Measurement of Modulated Signals for Communications”

OVERVIEW



*The Hilton Anaheim, venue for the 75th ARFTG
Microwave Measurement Conference*

More than 120 attendees participated in the 75th ARFTG Microwave Measurement Conference that took place at the Hilton Anaheim, Anaheim, California, on May 28th, 2010. As is usual for Spring ARFTG conferences, this conference formed part of Microwave Week 2010, which also included the International Microwave Symposium (IMS), the Radio Frequency Integrated Circuits (RFIC) symposium, and many workshops, tutorials and other meetings. All these events took place at the Anaheim Convention Center or the Hilton Anaheim. As well as its conference, ARFTG also sponsored a meeting of the NVNA Users' Forum and two joint ARFTG/IMS Workshops. Taken together, these activities ran from Sunday, May 23rd, through to Friday, May 28th.

A CD containing the 75th ARFTG conference digest can be purchased by contacting Jim Taylor (jtaylor114@kc.rr.com), the ARFTG Executive Secretary. For more information on ARFTG and its activities, including details of conferences past, present and future, visit the ARFTG website at www.arftg.org.

CONFERENCE TECHNICAL SESSIONS

The 75th ARFTG conference began with a welcome and introduction from Ken Wong, the Conference Chair. This conference received sponsorship from:

- Agilent Technologies
- Maury Microwave Corporation

The overall conference theme was “Measurement of Modulated Signals for Communications”, and featured four technical sessions and an interactive forum. The technical sessions consisted of papers given as oral presentations and began with an invited paper entitled “Modern Cellular Wireless Signals” presented by E. McCune. The technical sessions addressed modulated and nonlinear measurements, calibration techniques and other microwave measurement topics. The interactive forum featured a total of 10 papers presented as posters during the breaks from the technical sessions.



Interactive forum papers are presented as posters to encourage technical interactions between presenters and attendees.

There was a tie for the best oral paper presentation as selected by the conference attendees. The winners were “A VNA Based Broadband Loadpull for Non-parametric 2-port Best Linear Approximation Modeling”, by Y. Rolain, J. Schoukens, R. Pintelon, L. Delocht, and G. Vandersteen (Vrije Universiteit Brussel, Belgium) and “A Simplified Extension of X-parameters to Describe Memory Effects for Wideband Modulated Signals”, by J. Verspecht¹, D. E. Root², and J. Horn² (¹ Jan Verspecht B.V.B.A, Belgium; ²Agilent Technologies, United States). “Uncertainties in Coplanar Waveguide and Microstrip Line Standards for On-Wafer Thru-Reflect-Line Calibrations”, by U. Arz and K. Kuhlmann (PTB, Germany), was selected as the best poster presentation.

CONFERENCE EXHIBITS

A total of thirteen companies chose to exhibit their latest equipment at this conference. These companies were:

- Agilent Technologies
- Allstron
- AMCAD Engineering
- Anritsu Company
- Boonton Wireless Telecom Group
- Cascade Microtech
- Focus Microwave
- LeCroy
- Maury Microwave
- Mesuro
- NMDG
- Rohde & Schwarz
- Tektronix

The attendees selected Agilent Technologies as the best exhibitor at the conference.

To exhibit at future conferences, please contact the ARFTG Exhibits Chair, Brett Grossman (exhibits@arftg.org). For sponsorship opportunities, contact the Sponsorship Chair, Rusty Myers (sponsorship@arftg.org).



Exhibits from thirteen companies were available for attendees to visit.

AWARDS LUNCHEON

ARFTG President, Ron Ginley, presided over the awards luncheon. This began with Certificates of Appreciation being presented to the organizers of the 75th conference: Conference Chair, Ken Wong; Conference Host, Rusty Myers; Technical Program Chair, John Wood; Exhibits Chair, Brett Grossman; and the Session Chairs John Wood, Dominique Schreurs, Dave Blackham, Jean-Pierre Teyssier, and Ron Ginley.

This was followed by awards being presented for the previous (74th) conference, held in Boulder, Colorado. The award for best oral paper presentation was given to “Verifying Transmission Phase Measurements at Millimeter Wavelengths Using Beadless Air Lines”, by M. Horibe¹ and N. Ridler² (¹NMIJ, Japan; ²NPL, United Kingdom). The award for best interactive forum paper presentation was given to “Generalized Method for Broadband Measurement of Extreme Impedances”, by M. Randus and K. Hoffmann (Czech Technical University, Czech Republic). The best exhibitor award went to Maury Microwave.

NVNA USERS' FORUM

The meeting of the NVNA Users' Forum was held on Thursday afternoon, May 27th, also at the Hilton Anaheim. Approximately 53 people from industry, government and academia attended the meeting. After introductions, five presentations were given by various NVNA solutions providers. The remainder of the meeting was devoted to the discussion of the needs of users of NVNA equipment.

JOINT ARFTG/IMS WORKSHOPS

Two joint ARFTG/IMS workshops were held during Microwave Week 2010 and were held at the Anaheim Convention Center. The first workshop, entitled "High Speed Signal Integrity", took place on Sunday, May 23rd and was organized by Brett Grossman (Intel, United States) and Mike Resso (Agilent Technologies, United States). The second workshop, entitled "Making Reliable Measurements at Millimeter and Submillimeter Wavelengths," took place on Monday, May 24th and was organized by Nick Ridler (NPL, United Kingdom) and Andrej Rumiantsev (Cascade Microtech, Germany).

FUTURE EVENTS

NVNA Users' Forum

This next meeting will be held during European Microwave Week 2010, which takes place from September 27th to October 1st, 2010, in Paris, France. (Information on European Microwave Week is available at www.eumweek.com.) The NVNA Users' Forum will be on Wednesday, September 29th, from 08:30 AM to 10:10 AM (room Dupin 3) and will be co-sponsored by the European Microwave Association. The meeting will be chaired by Jean-Pierre Teyssier, XLIM, University of Limoges (teyssier@brive.unilim.fr). The agenda and other details will be available at www.arftg.org.

Fall 2010 ARFTG Symposium

This year's Fall ARFTG Symposium will comprise the 76th Microwave Measurement Conference, the NIST/ARFTG Measurement Short Course, two workshops and the NVNA Users' Forum. All these events will be held at the Marriott Suites at Clearwater Beach, in Clearwater, Florida (near Tampa), from November 30th to December 3rd, 2010. The timetable for all these events is given on this page (times are preliminary).

Microwave Measurement Conference

The theme for the 76th ARFTG Microwave Measurement Conference is "Millimeter-wave Measurements and Modeling". The deadline for submitting an abstract/summary for consideration by the conference Technical Program Committee is September 10th, 2010. To submit a paper, go to http://www.mtt-tpms.org/symposia_v6/ARFTG_Fall/start.html. As on previous occasions, the conference will offer ample opportunity for participants to interact with leading professionals in related RF and microwave fields. For more information, visit www.arftg.org or contact the Conference Chair, Dave Blackham, (dave_blackham@agilent.com), or the Technical Program Chair, Jon Martens (jmartens@anritsu.com).

Fall 2010 ARFTG Symposium – tentative schedule

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| Tuesday November 30 th 8:00 am – 5:00 pm | NIST / ARFTG Short Course |
| Wednesday December 1 st 8:00 am – 12:00 noon | |
| Wednesday December 1 st 1:30 pm – 5:00 pm | Workshop I |
| Wednesday December 1 st 5:00 pm – 7:00 pm | NVNA Users' Forum |
| Thursday December 2 nd 8:00 am – 5:00 pm | 76 th Microwave Measurement Conference |
| Thursday December 2 nd 6:30 pm – 10:00 pm | Awards Banquet |
| Friday December 3 rd 8:00 am – 12:00 noon | 76 th Microwave Measurement Conference (continued) |
| Friday December 3 rd 1:00 pm – 4:00 pm | Workshop II |

NIST / ARFTG Short Course

This one-and-a-half day short course will include topics specific to the conference theme (i.e. "Millimeter-wave Measurements and Modeling"). Additional topics include: connectorized and on-wafer S-parameters, power, noise, nonlinear measurements and uncertainty analysis. For more information, visit www.arftg.org or contact the short course organizer, Dominique Schreurs (dominique.schreurs@esat.kuleuven.be).



The Marriott Suites at Clearwater Beach, near Tampa, Florida, venue for the Fall 2010 ARFTG Symposium

NVNA Users' Forum

This meeting will also take place during the Fall 2010 ARFTG Symposium. The program should be available at www.arftg.org approximately one month prior to the meeting. Those with potential agenda items for this meeting should contact the Forum organizers: Jean-Pierre Teyssier (teyssier@brive.unilim.fr), Dominique Schreurs (dominique.schreurs@esat.kuleuven.be), John Wood (john.wood@freescale.com), or Patrick Roblin (roblin@ece.osu.edu).

Measurement Workshops

There will be two Fall 2010 ARFTG Symposium workshops with a Wednesday afternoon workshop entitled "Equipment and Techniques for mm and Sub-mm Waves" chaired by Zoya Popovic of the University of Colorado-Boulder. A Friday afternoon workshop will be devoted to nonlinear measurements. For more information, contact the workshop organizer, Jean-Pierre Teyssier (teyssier@brive.unilim.fr). More details will also be available closer to the symposium at www.arftg.org.

Spring 2011 ARFTG activities

The 77th ARFTG Microwave Measurement Conference will be held at the Hilton Baltimore on June 10th, 2011, in Baltimore, Maryland, as part of Microwave Week 2011, in conjunction with IMS (www.ims2011.org) and the RFIC symposium (www.rfic2011.org). The conference theme is "Design and Measurements of Microwave Systems". **The deadline date for submission of electronic paper abstracts/summaries is December 31, 2010** – earlier than in some previous years. For up-to-date information, visit www.arftg.org or contact the Conference Chair, Mohammed Sayed (mmsayed@sbcglobal.net) or the Technical Program Chair, Jon Martens (jmartens@anritsu.com).

It is also planned to hold a meeting of the NVNA Users' Forum, as part of the Spring 2011 ARFTG activities, and to co-sponsor appropriate workshops and/or tutorials that will be taking place during Microwave Week 2011.

COMPILATION ARFTG CDs

The ARFTG compilation CD that contains the digests from ARFTG conferences during the years 1982 to 2001 has now been supplemented with an additional CD that includes conferences from 2002 to 2007. The cost of the combined CDs is currently \$105 for members or \$140 for non-members. In addition, a CD containing the Nonlinear Measurement Workshop compendium of six workshops presentation material, 2001 through to 2006, is also available for purchase. The cost is currently \$70 for members or \$105 for non-members. For additional information on purchasing the above CDs, contact Jim Taylor (jtaylor114@kc.rr.com), the ARFTG Executive Secretary.

STUDENT FELLOWSHIP

The next application deadline for the ARFTG Microwave Measurement Student Fellowship is October 1, 2010. The purpose of this fellowship is to recognize and provide financial assistance to graduate students who show promise and interest in pursuing research related to microwave measurement techniques. For more information, visit www.arftg.org or contact the fellowship coordinator, Dominique Schreurs (dominique.schreurs@esat.kuleuven.be).

A previous winner shared his experience: "My name is Maciej Myslinski and I'm a 2005 ARFTG student fellowship awardee. Thanks to the fellowship I was able to conduct my research in NIST and present the results at the 68th ARFTG Symposium. The grant not only allowed me to interact with top-class scientists, to gain access and knowledge of advanced microwave instrumentation unavailable at my home institution, but also facilitated the development of my career in microwave measurement techniques."

ADDENDUM

Every effort has been made to publish correct information in this newsletter. Significant errors should be reported to the ARFTG Executive Committee Secretary, Jon Martens (jmartens@anritsu.com), so that corrections can be reported in the next issue.