



AUTOMATIC RF TECHNIQUES GROUP

NEWSLETTER

SUMMER 2013

NUMBER 49

Important deadlines:

Sept. 2, 2013: 82nd conference summaries (and Ph.D. student sponsorship applications)

Sept. 10, 2013: IMS/ARFTG workshop proposals for spring 2014

Oct. 1, 2013: Student fellowship applications

Feb. 14, 2014: 83rd conference summaries (Spring 2014)

81st ARFTG Microwave Measurement Conference: “Metrology for High Speed Circuits and Systems”

OVERVIEW



The Grand Hyatt Seattle, site for the 81st ARFTG Microwave Measurement Conference

Over 130 attendees participated in the 81st ARFTG Microwave Measurement Conference that took place at the Grand Hyatt Seattle on June 7th, 2013. As is usual for Spring ARFTG conferences, this conference formed part of Microwave Week 2013, which also included the International Microwave Symposium (IMS), the Radio Frequency Integrated Circuits (RFIC) symposium, and many workshops, tutorials and other meetings. In addition to its conference, ARFTG also sponsored a meeting of the NVNA Users' Forum, two joint ARFTG/IMS Workshops and two joint ARFTG/IMS technical sessions during the IMS conference. Taken together, these activities ran from Monday, June 3rd through Friday, June 7th.

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 81st ARFTG conference began with a welcome and introduction from Nick Ridler, the president of ARFTG, and Leonard Hayden, the Conference Co-Chair. Technical program co-chair, Dave Blackham, introduced the program. The overall conference theme was “Metrology for High Speed Circuits and Systems”, and featured four technical sessions and an interactive forum. The main technical sessions consisted of papers given as oral presentations and addressed a variety of linear and nonlinear calibration topics, high frequency measurement system design and analysis, and measurement stability and verification issues. Lively discussion followed many of the papers which contributed to the conference. The technical sessions were all recorded (with author permission) and talks will be available for later viewing at www.arftg.org. The interactive forum featured a total of 25 papers presented as posters during the breaks from the technical sessions.

The best oral paper presentation, as selected by the conference attendees, was “Edge-related calibration and measurement characteristics in pulsed profile S-parameter analysis” by J. Martens (Anritsu, US). The best poster paper was voted to be “Development and traceable measurements of 0.800 mm coaxial airline: broadband standard to 145 GHz” by T. Roberts, B. Lee, and J. Martens (Anritsu, US).



Over 130 attendees listened to presentations on a variety of measurement topics related to high speed circuits and systems.

ARFTG is pleased to thank the sponsors of the 81st Microwave Measurement Conference:

Platinum sponsor: Freescale

Gold sponsors: Anritsu, Maury Microwave, and RFMD

Silver sponsors: Agilent Technologies, AWR/National Instruments, Focus Microwaves/ElectroRent, and Mesuro

For future sponsorship opportunities, contact the Sponsorship Chair, Joe Gering (sponsorship@arftg.org).



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

CONFERENCE EXHIBITS

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

- Virginia Diodes, Inc.
- Tektronix
- Rohde & Schwarz
- OML, Inc.
- Microsanj
- Mesuro
- Maury Microwave
- HFE
- Focus Microwave
- Flann Microwave Ltd
- Cascade Microtech
- Anritsu Company

Cascade Microtech was voted as best exhibitor by the attendees.

To exhibit at future conferences, please contact the ARFTG Exhibits Chair, Rusty Myers (exhibits@arftg.org).



Exhibits from twelve companies were available for attendees to visit. The exhibits were co-located with the interactive forum session during two extended breaks.

AWARDS LUNCHEON

ARFTG President, Nick Ridler, presided over the awards luncheon. This began with Certificates of Appreciation being presented to the organizers of the 81st conference: Conference Co-Chairs, Leonard Hayden and Brett Grossman; Technical Program Co-Chairs, Dave Blackham and Joe Gering; Local Host, Dennis Lewis; Sponsorship Chair, Joe Gering; Exhibits Chair, Rusty Myers; NVNA Users' Forum Organizers, Dominique Schreurs and Patrick Roblin; and the Session Chairs, Dave Blackham, Mohamed Sayed, Joe Gering, Rusty Myers, and Mitch Wallis.

This was followed by awards being presented for the previous (80th) conference, held in San Diego. The

award for best oral paper presentation was given to “An innovative waveguide interface and quarter-wavelength shim for the 220-325 GHz band” by Y. Lau and D. J. Vondran (OML, Inc., US). The award for best interactive forum presentation went to “A procedure for measurement of S-parameters and eye-diagram of backplane using two-port VNA” by K. Hoffman (Czech Technical University, Prague, Czech Republic). The best exhibitor award was presented to Maury Microwave.

NVNA USERS' FORUM

The meeting of the NVNA Users' Forum was held on Thursday afternoon, June 6th, in the Grand Hyatt hotel. The forum was moderated by Patrick Roblin and Dominique Schreurs and attended by over 40 people. Continuing from the previous meeting, Dylan Williams and Kate Remley presented information on the student competition held at IMS this year (organized by MTT-11 including a number of ARFTG members) involving a nonlinear verification element. The planned upcoming round robin verification program for nonlinear measurement was also discussed. Two additional scheduled topics led to spirited discussion: the impact of NVNAs on power amplifier design methodologies and the role of NVNAs in device model development. More information can be found at http://www.arftg.org/about_nvna.html.



The NVNA users' forum was held on June 6th.

JOINT ARFTG/IMS WORKSHOPS

Two joint ARFTG/IMS workshops were held on Monday, June 3rd at the Washington State Convention Center. These were entitled “The importance of low-frequency measurements on high-frequency characterization” (organized by Nuno Carvalho, Instituto de Telecomunicacoes – Universidade de Aviero, Portugal; Kate Remley, NIST, US; and Jon

Martens, Anritsu, US) and “High speed signal integrity workshop” (organized by Mike Resso and Heidi Barnes, Agilent Technologies, US). Both workshops had over 30 attendees.

FUTURE EVENTS

NVNA Users' Forum

The Users' forum was discussed earlier in reference to the 81st ARFTG conference and meetings of this group occur at every ARFTG conference. In addition, meetings are often held in Europe in conjunction with other conferences. More information on the latest activities and schedules can be found at http://www.arftg.org/about_nvna.html.

Fall 2013 ARFTG Symposium

This year's Fall ARFTG Symposium will comprise the 82nd Microwave Measurement Conference, a short course, two workshops and the NVNA Users' Forum meeting. All of these events will be held at The Blackwell Inn and Conference Center, Columbus, Ohio (on the campus of The Ohio State University) on November 18th-21st, 2013. Registration for all events (preliminary schedule on the next page) will be possible at www.arftg.org/conferences/82nd_conference.html. **Note that the fall symposium dates are earlier than in some previous years.**

The ARFTG Ph.D. Student Sponsorship Initiative is in place for this conference to help students defray the expense of attending. For more information, visit http://www.arftg.org/conferences/82nd_conference.html. The application deadline is September 2nd.

Short course and workshops

As has been done at many fall symposia in the past, a 1/2 day short course will be conducted covering practical and advanced microwave measurement techniques and practices. For more information, contact Patrick Roblin (roblin@ece.osu.edu).

Two workshops, organized by Patrick Roblin, will also be held. The first will be held on Tuesday afternoon and is entitled “Modeling and linearization of power transistors and power amplifiers.” The second will be held on Thursday afternoon and is entitled “Theory and techniques for on-wafer calibration.” More details can be found at the conference web page listed above.

Microwave Measurement Conference

The theme for the 82nd ARFTG Microwave Measurement Conference is “Characterization,

Modeling, and Design of RF and mm-Wave Devices and Circuits". The deadline for submitting a summary (with supporting data) for consideration by the conference technical program committee is September 2nd, 2013. The paper submission link and instructions will be at www.arftg.org/conferences/82nd_conference.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, contact the Conference Chair, Patrick Roblin (roblin@ece.osu.edu) or the Technical Program Chairs, Roberto Rojas-Teran (rojas-teran.1@osu.edu) and Peter Aaen (paaen@ieee.org).

Fall 2013 ARFTG Symposium – tentative schedule

Monday, Nov. 18 th 8:00 am – 5:00 pm	NIST/ARFTG Short Course
Tuesday, Nov. 19 th 8:00 am – 12:00 pm	NIST/ARFTG Short Course
Tuesday, Nov. 19 th 1:20 pm – 5:00 pm	Nonlinear modeling and linearization workshop
Tuesday, Nov. 19 th 5:00 pm – 7:00 pm	NVNA Users' Forum
Wednesday, Nov. 20 th 8:00 am - 5:00 pm	82 nd Microwave Measurement Conference
Wednesday, Nov. 20 th 7:00 pm – 10:00 pm	Reception and Awards Banquet
Thursday, Nov. 21 st 8:00 am – 12:00 pm	82 nd Microwave Measurement Conference (continued)
Thursday, Nov. 21 st 1:20 pm – 5:00 pm	On-wafer calibration workshop
Friday, Nov. 22 nd 8:00 am – 11:00 am	ElectroScience Laboratory tour at Ohio State

NVNA Users' Forum

This meeting will also take place during the Fall 2013 ARFTG Symposium. The program should be available at www.arftg.org approximately one month prior to the meeting. Suggestions for discussion topics can be sent to Joe Gering (jgering@rfmd.com) or Jean-Pierre Teyssier (jean-pierre.teyssier@unilim.fr).

Spring 2014 ARFTG activities

The 83rd ARFTG Microwave Measurement Conference will be held on June 6th, 2014 in Tampa, Florida as part of Microwave Week 2014, in conjunction with IMS (www.ims2014.org) and the RFIC symposium. This year, the ARFTG conference will be co-located with WAMICON 2014 (at the Tampa Marriott Waterside

Hotel and Marina) to allow attendees to hear about an even wider variety of topics. **The deadline date for submission of electronic paper summaries (with supporting data and figures) is February 14th, 2014.** For up-to-date information, visit www.arftg.org or contact the Conference Chair, Mohamed Sayed (mmsayed@sbcglobal.net) or the Technical Program Chair, Jon Martens (jmartens@ieee.org).

It is also planned to hold a meeting of the NVNA Users' Forum, as part of the spring 2014 ARFTG activities, and to co-sponsor appropriate workshops that will be taking place during Microwave Week 2014. For those interesting in organizing a workshop, note that the proposal deadline is Sept. 10th, 2013 (contact Antonio Raffo for more information at antonio.raffo@unife.it).



The Blackwell Hotel and Conference Center, site for the Fall 2013 ARFTG Symposium

STUDENT FELLOWSHIP

The next application deadline for the ARFTG Microwave Measurement Student Fellowship is October 1, 2013. 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, Patrick Roblin (roblin@ece.osu.edu).

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@ieee.org), so that corrections can be reported in the next issue.