



AUTOMATIC RF TECHNIQUES GROUP

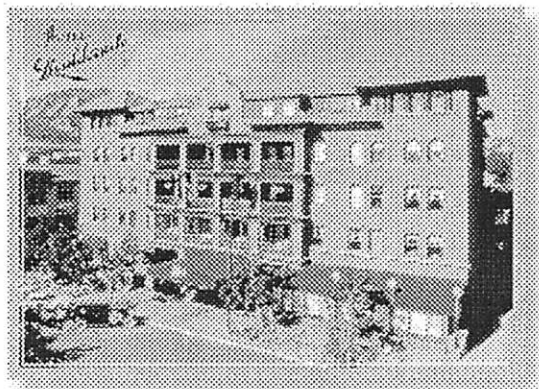
CONFERENCE NEWSLETTER

Winter 2004

NUMBER 30

The 62nd Conference *Differential Measurements*

OVERVIEW



Boulder, CO provided a very enjoyable setting for the 62nd ARFTG conference, held on December 4th and 5th. This conference offered a two-day technical program. A complete listing of the papers presented is available in the conference digest and also on the ARFTG website at www.arftg.org. Conference Chair Dylan Williams and Technical Program Chair Kate Remley put forth considerable effort to ensure an outstanding conference.

SHORT COURSE

The 10th annual NIST/ARFTG Microwave Measurements Short Course was given on December 2nd and 3rd at the Boulderado Hotel in Boulder, CO. This one and a half day course offers an excellent introduction for those new to the field or a review for those who wish to expand their knowledge on a wide variety of topics germane to high frequency measurements. The course material included: microwave measurements overview; circuit theory; vector network analysis, RF and microwave interconnects, power, noise, digital modulation, time

domain, wideband radio link modeling, simulation, and measurement. The course organizers and instructors put forth considerable effort in keeping the presentations fresh and up-to-date. The first day of course focuses on RF and Microwave measurement basics, while the second day is tailored to the conference theme. The author benefited greatly when he took the course several years ago. Additional short course information is available on our website at www.arftg.org or by contacting the ARFTG Short Course Director, David Walker, dwalker@boulder.nist.gov.

Nonlinear Measurement Workshop



The 3rd Nonlinear Measurement Workshop was also held at the Boulderado Hotel on the afternoon of December 3rd. The workshop covered recent developments in Load-Pull measurements, nonlinear network analysis, and prediction of system parameters from nonlinear measurements. Workshop Organizer Juan Carlos Pedro did a great job and we all are looking forward to attending the next workshop in the Fall of 2004.

TECHNICAL SESSIONS



The technical sessions were held December 4th and 5th at the Boulderado Hotel, Boulder, CO. These sessions discussed the conference theme as well as a number of other diverse topics of common interest. Technical Program Chair Kate Remley and Conference Chair Dylan Williams assembled an interesting program consisting of 37 presented papers. Topics included: Differential Measurements, Temporal Measurements, for 40 GB/s Systems, Nonlinear measurements, Circuit and Device Models, VNA Calibrations, and Measurement Accuracy.

Selected by the conference attendees as the Best Technical Paper was "Over Determined Calibration Schemes for RF Network Analysers Employing Generalised Distance Regression", presented by Nick Riddler of the NPL, UK. Selected as Best Poster Session was "Repeatability Study of Commercial Harmonic Phase Standards" presented by Jeff Jargon of NIST. The Best exhibitor was Maury Microwave.

EXHIBITS

The exhibits area at an ARFTG Conference provides attendees with an opportunity to view newly developed products and to have in depth discussions with suppliers about their test and measurement problems and needs. For additional information please contact Exhibits Chair Leonard Hayden, leonard@cmicro.com.

CD-ROM, DIGESTS & COURSE NOTES

Available for purchase are printed digests and course notes from this and previous conferences. Also the collected ARFTG Digests for 1982-2001 conferences are for sale on CD-ROM. For additional information, visit our website at www.arftg.org or contact Jim Taylor, the ARFTG Executive Secretary, jtaylor@blitz-it.net.

AWARDS BANQUET



The awards banquet was held at the Nabil's Mediterranean Restaurant, Boulder, CO. The evening included sparkling conversation, good food, and an intimate atmosphere. President Chip Wilker presented the following awards:

ARFTG Service Award
Kate Remley

ARFTG Distinguished Award
Robert Judish

ARFTG Technology Awards
Robert Judish and John Gregory Burns

Best Paper 61st Conference
Kate Remley

Best Interactive Session 61st Conference
Dylan Williams

Best Exhibitor 61st Conference
Maury Microwave

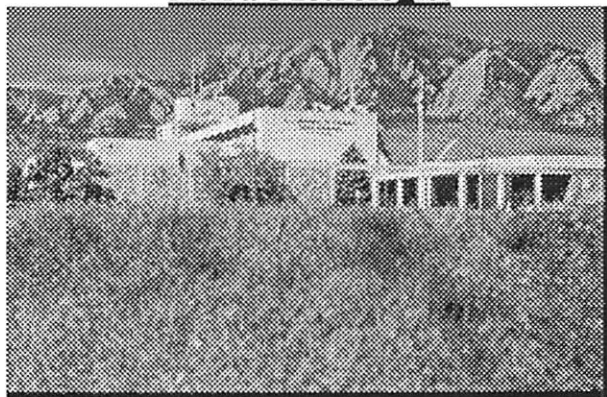
Conference Chair 62nd Conference
Dylan Williams

CHECK YOUR MEMBERSHIP STATUS

Please check the address label attached to this mailing. It indicates your membership status as either "Member in Good Standing", "Expiring", or "Non-member". You receive membership credit for each ARFTG Course or Conference you attend or you may send \$25 to renew your membership to:

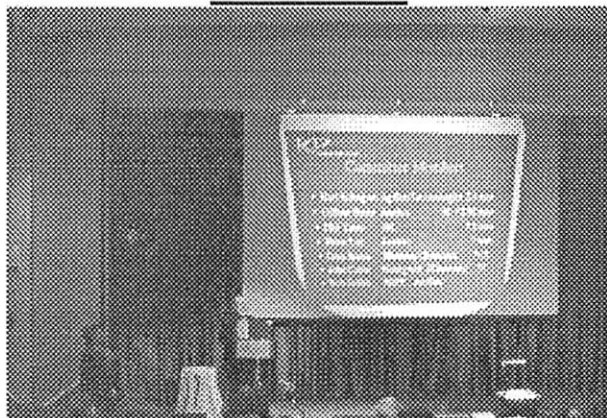
ARFTG PO Box 228, Rome, NY 13442-0228.

Ask a Metrologist



The 62nd ARFTG Conference also included the popular "Ask A Metrologist" on December 5th in the NIST Laboratories Boulder, Colorado. It was an informal time to discuss measurements and measurement techniques with leaders in their respective fields in the NIST facilities where they work.

MEASUREMENT COMPARISON PROGRAM



The ARFTG Measurement Comparison Program allows participating laboratories to compare their measurements on the ARFTG standards kits to those obtained from other laboratories. Given the increasing emphasis on measurement assurance, this program provides a valuable, cost-effective method for validating the participant's measurement capability. This program is not intended to provide an uncertainty analysis but should give the participants more confidence in their measurement capability and assist in identifying measurement deficiencies. Data obtained from the participating labs are sent to NIST where the results are added to a database and a report is sent to the customer.

The following are a list of available MCP kits and their respective coordinators.

Connector	Contact
7/16	Greg Burns, Northrup Grumman
Type N	John Cable, Honeywell
7 mm	Brian Lee, Agilent Technologies
3.5 mm	Phil Yates, JPL
Type K, 2.92 mm	Ron Guzman, Anritsu
2.4 mm	Ken Wong, Agilent Technologies

For more information or to obtain a signup sheet visit our website at www.arftg.org or contact John Cable jcable@kcp.com.

MICROWAVE MEASUREMENT STUDENT FELLOWSHIP

ARFTG has an ongoing Microwave Measurement Student Fellowship Program. 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 improvement of radio frequency and microwave measurement techniques. One or more awards, of up to \$5000, may be granted each year, based on available funding and on the number and quality of applications received.

Applicants must be enrolled as a full-time student at a suitably qualified institution of higher learning. Applicants must be carrying out research as part of the degree program, rather than just taking course work. The proposed research project must clearly involve RF/microwave measurements and be supervised by a full-time faculty member. The faculty advisor or supervisor must be an ARFTG member or the proposal must be sponsored by an ARFTG member.

The Board of Directors approved the award of two Fellowship Awards. These Fellowship awards were presented to Giovanni Loglio of University of Florence, Italy and Charles Baylis of University of South Florida.

Additionally, ARFTG has initiated a Student Stipend for full time students who present a paper at an ARFTG conference. These were available to: Michael McKinley, Georgia Tech; Jiarui Lina and Wenhua Dai, Ohio State University; Jayesh Nath, North Carolina State University; Koocho Jung, University of Florida; Balaji Lakshminarayanan, University of South Florida; Selcuk Helhel, S Demirel University of Turkey; Karel Hoffmann and Vratislav Sokol, Czech Technical University in Prague; and Dean Rabijs, Vrije Univrsiteit Brussel.

For more information visit our website at www.arftg.org or contact Jeff Jargon at: jargon@boulder.nist.gov.

ANNUAL BUSINESS MEETING

The annual business meeting, consisting of the membership present, was called to order by President Chip Wilker.

An election was held for four members to serve on the Board of Directors (BoD). As currently constituted, the BoD is composed of twelve voting members each elected for a three year term. Eight candidates were introduced to the membership. Biographies of the candidates were distributed with the conference materials and each member was asked to review them. The ballots were passed out, a vote requested and the ballots were collected. The Past Presidents then proposed to the membership an increase in the size of the BoD from the current twelve members to fifteen. After a spirited discussion, the membership approved the proposal. Chip Wilker, Dave Walker, Dominique Schreurs, Nick Riddler, Ron Ginley, John Cable and Uwe Arz were each elected.

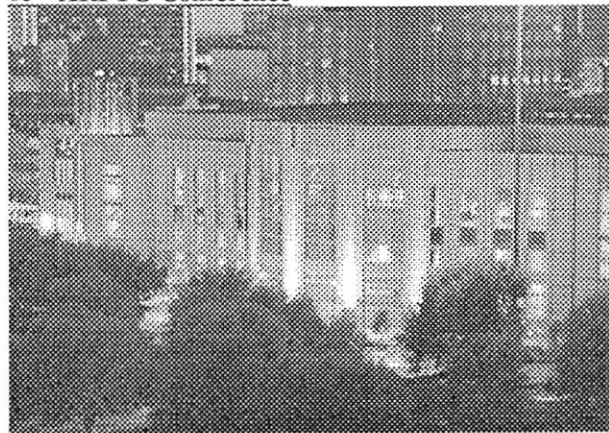
Treasurer Ken Wong reported that the financial report of the organization is excellent and a balance sheet is available upon request. President Wilker adjourned the meeting.

ExCom MEETING

The ARFTG bylaws stipulate that the Executive Committee meet twice a year. The elected officers for the calendar year 2004 are: President Brian Pugh, Vice President J. Gregory Burns, Secretary Nick Riddler and Treasurer Ken Wong. A complete list of the ARFTG ExCom members and assignments are enumerated on the ARFTG web site www.arftg.org.

FUTURE CONFERENCES

63rd ARFTG Conference



The 63rd ARFTG Conference will be held on Friday June 11, 2004, in conjunction with the MTT International Microwave Symposium (IMS) at the Convention Center in Fort Worth, Texas. The main conference theme is "*On Wafer Characterization*". Please contact either the Conference Chairman, John W. Cable (jcable@kcp.com or 816.997.4361) or the Technical Program Chairman, Charles E. Gustof (c-gustof@ratheon.com or 972.344.2715).

11th NIST/ARFTG Short Course

ARFTG in cooperation with NIST will offer its eleventh annual Microwave Measurements Short Course in conjunction with the Fall 2004 ARFTG Conference to be held in Orlando, Florida. This popular two-day course provides both grounding in the fundamentals as well as the latest in measurement techniques taught by the experts. Basic measurement techniques are covered on Day 1, including: microwave measurement overview, circuit theory, vector network analyzers, test fixtures, on-wafer measurements, power, and noise. Additional in-depth topics are covered on Day 2, including: phase noise, load-pull, digital modulation, and time domain techniques. Several tutorials specifically related to the conference theme are also covered on Day 2. For more information, please visit our web site, www.arftg.org, or contact the short course director, Dave Walker, (dwalker@boulder.nist.gov or (303)-497-5490).

64th ARFTG Conference

The 64th ARFTG Conference will be held in Orlando, Florida on 4 & 5 December, 2003. The main conference theme is as yet to be announced. For more information, please contact the Conference Chair, Joe Tauritz, (j.l.tauritz@el.utwente.nl).

65th ARFTG Conference

The 65th ARFTG Conference will be held in conjunction with the MTT International Microwave Symposium (IMS). The ARFTG Conference will be held on Friday the 10th of June, 2005 in Long Beach, California.

Additions/Corrections

Every effort has been made to publish correct information. Problems should be reported to the undersigned. Corrections will be made in the final copy of the Newsletters found in the Digest.

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