TH1A Innovations in Microwave Systems

Chair: D. Meharry, Sanders, a Lockheed Martin Co.
Co-chair: R. Ranson, Filtronic Comtek
Room A201

8:00 AM
TH1A-1: *An Ultra-Wideband Exciter for Ground Penetration Radar System*
E. Adler, P. Phu, J. Clark, J. Speulstra, Army Research Lab., Adelphi, MD, M. Bartlett, J. Fisher, Elec. Comm. Lab., Gainesville, FL

8:20 AM
TH1A-2: *Broadband Waveguide-Based Spatial Power Combiners*
A. Alexanian, R. A. York, Dept. of ECE, Univ. of California, Santa Barbara, CA

8:30 AM
TH1A-3: *60-GHz-Band Ultracompact Transmitter for HDTV*
H. Nakakita, F. Suginoshita, N. Yazawa, NHK Sci. & Tech. Research Labs., Tokyo, Japan

8:40 AM
TH1A-4: *A 28 GHz LMDS Transceiver for Subscriber Applications*
D. Vik, D. Donoghue, A. Borghetti, Z. Bogan, Alpha Industries, Woburn, MA

8:50 AM
TH1A-5: *Channel Loading Effects on Power Limited Wireless Transmitters Utilizing Discrete Multitone Modulation*
A. Leke, Info. Sys. Lab., Stanford Univ., Stanford, CA, J.S. Kenney, Pacific Monolithics Inc., Sunnyvale, CA

9:10 AM
TH1A-6: *A Novel RF to Baseband Monolithic Microwave Receiver with On-Chip Tuning*
L.A. Geis, M.A. Wyatt, D. Starratt, Honeywell, Inc., Space Sys., Clearwater, FL

9:20 AM
TH1A-7: *A High Performance Transceiver Hybrid IC for PHS Hand-Set Operating with Single Positive Voltage Supply*
M. Nishijima, J. Itoh, T. Kunihisa, T. Yokoyama, S. Yamamoto, K. Miyatsuji, M. Nishitsuji, O. Ishikawa, Elec. Research Lab., Matsushita Elec. Corp., Osaka, Japan

TH1B Microwave Metrology and Standards: A Historical View

Chair: R.A. Kamper, NIST (Retired)
Room A207

TH1B-1: *Microwave Standards at the Boulder Laboratories of NBS*
W. F. Snyder, Nat'l. Bureau of Stds. (now NIST), retired, Boulder, CO

TH1B-2: *Cesium Beam Frequency Standards*
W.D. Lee and D.B. Sullivan, Time and Frequency Division, NIST, Boulder, CO

TH1B-3: *The Waveguide Below Cutoff Attenuation Standard*
D.H. Russell, NIST (Retired) Micro. Eng., Louisville, CO

TH1B-4: Invited: *A Review of the Six-Port Measurement Technique*
G. F. Engen, Engen Consulting, Boulder, CO

TH1B-5: *Near-Field Characterization of Antennas*
Allen C. Newell, NIST, Boulder, CO

TH1C Millimeter and Microwave Power Amplifiers

Chair: H.J. Kuno, Quin Star Technology
Co-chair: K. Ikossi-Anastasiou, Louisiana State University
Room A102

TH1C-1: *A 94-GHz Monolithic High Output Power Amplifier*
P. Huang, E. Lin, R. Lai, M. Miedenbender, T.W. Huang, H. Wang, C. Geiger, T. Block, P.H. Liu, TRW, Redondo Beach, CA

TH1C-2: *60 GHz High-Efficiency HEMT MMIC Chip Set Development for High-Power Solid State Power Amplifier*
Y. Hwang, G. Schreyer, G. Zell, S. Schrier, D. Yamauchi, G. Onak, B. Kasody, R. Kono, Y.C. Chen, R. Lai, TRW Inc., ESTD, Redondo Beach, CA

TH1C-3: *A 6 Watt Ka-Band Power Module Using MMIC Power Amplifiers*
D.L. Ingram, D.I. Stone, T.W. Huang, H. Wang, M. Siddiqui, M. Nishimoto, B. Allen, D. Tamura, R. Lai, M. Biedebender, H.C. Yen, TRW, Inc., ESTD, Redondo Beach, CA

TH1C-4: *High Gain and High Efficiency K-Band Power HEMT with WSi/Au T-Shaped Gate*
T. Kunii, N. Yoshida, S. Miyakuni, T. Shiga, J. Udomoto, A. Inoue, T. Ishikawa, Mitsubishi Elec. Corp., Hyogo, Japan

TH1C-5: *Novel InGaP/AlGaAs/InGaAs Hetrojunction FET for X-Ku Band Power Applications*
Y. Okamoto, K. Matsunaga, M. Kanamori, Kansai Elec. Research Labs., M. Kuzuhara, ULSI Device Research Labs., NEC Corp., Shiga, Japan

TH1C-6: *Development of a Compact, Broadband FET Linearizer for Satellite Use*
S. Ogura, K. Seino, T. Ono, A. Kamikokura, H. Hirose, Mitsubishi Elec. Corp., Kamakura Works, Kanagawa, Japan

TH1C-7: *A Microwave Miniaturized Linearizer Using A Parallel Diode*
K. Yamauchi, K. Mori, M. Nakayama, Y. Mitsui, T. Takagi, Mitsubishi Elec. Corp., Kanagawa, Japan

TH1D Signal Generation

Chair: S. Wetenkamp, SCEAN
Room A101

TH1D-1: *High Efficiency Planar Oscillator with RF Power of 100 mW Near 140 GHz*
M. Wollitzer, J. Buechler, J.-F. Luy, Daimler Benz Research, Ulm, Germany

TH1D-2: *A Low-Power X-Band Frequency Synthesizer Module*
T. Nakagawa, H. Okazaki, Y.Yamaguchi, NTT Wireless Systems Labs.,

TH1D-3: *A DC to X-Band Frequency Doubler Using GaAs HBT MMIC*
X. Zhang, Y.-H. Yun, M/A-COM Inc., Lowell, MA

TH1D-4: *A 5 to 10 GHz Low Spurious Triple Tuned Type PLL Synthesizer Driven by Frequency Converted DDS*
K. Tajima, Y. Imai, Y. Kanagawa, K. Itoh, IT R&D Ctr., Mitsubishi ELec. Corp., Kanagawa, Japan

TH1D-5: *A Very Wide-Tuning Range 5-GHz-Band Si Bipolar VCO Using Three-Dimensional MMIC Technology*
K. Kamogawa, K. Nishikawa, I. Toyoda, T. Tokiumitsu, NTT Wireless Sys. Labs., C. Yamaguchi, M. Hirano, NTT Sys. Elec. Labs., Kanagawa, Japan

TH1D-6: *W Band Monolithic Multipliers*
F. Brauchler, Texas Instr. Research Labs., J. Papapolymerou, J. East, L. Katehi, Dept. of EECS, Univ. of Michigan, Ann Arbor, MI

TH1E Application Oriented Concepts in Field Theory

Chair: F. Arndt, U. of Bremen, Germany
Co-chair: J. Mink, North Carolina State University
Room A108

TH1E-1: *Application of the TLM Method for the Analysis of Longitudinally Periodic Structures*
M. Walter, U. Muller, A. Beyer, GM Duisburg Univ., Dept. of EE, Duisburg, Germany

TH1E-2: *Modal Block-LU-Decomposition Technique for the Efficient CAD of Ridged Waveguide Filters*
R. Beyer, F. Arndt, Micro. Dept., Univ. of Bremen, Bremen, Germany, W. Hauth, Bosch Telecom GmbH, Germany

TH1E-3: *A New Global Time Domain Electromagnetic Simulator of Microwave Circuits Including Lumped Elements Based on Finite Element Method*
K. Guillouard, M. F. Wong, V.F. Hanna, France Telecom, France, J. Citerne, INSA-CNRS, France

TH1E-4: *Variational Analysis of Arbitrarily Oriented Thick Iris Coupling Between a Rectangular and an Elliptical Waveguide*
A. Morini, T. Rozzi, M. Pisstolesi, F. Spinsanti, Dip. Elett., Univ. of Ancona, Ancona, Italy

TH1E-5: *Field Theory Analysis of Conically Shaped Coupling Elements in Dual Mode Filters and Polarizers*
U. Balaji, R. Vahldieck, LLiMiC, Dept. of ECE, Univ. of Victoria, Victoria, B.C., Canada