WE2A Packaging and Interconnect Technologies

Chair: J. Pavio, Motorola
Co-chair: M. Harris, Georgia Tech

Room A201

10:10 AM **WE2A-1:** *Design and Performance of a High Density Microwave 3D Microwave Module*
R. Sturdivant, C. Ly, J. Benson, M. Hauhe, Hughes Aircraft Co., Fullerton, CA

10:30 AM **WE2A-2:** *Using MMIC Flip Chips and CVD Diamond for Improved Thermal Management of Microwave Modules*
R. Sturdivant, C. Ly, J. Benson, J. Wooldridge, Hughes Aircraft Co., Fullerton, CA

10:40 AM

10:50 AM **WE2A-3:** *Line-Loss and Size Reduction Techniques for Millimeterwave RF Front-End Boards by Using Polyimide/Alumina-Ceramic Multilayer Configuration*
M. Nakatsugawa, A. Kanda, H. Okazaki, K. Nishikawa, M. Muraguchi, NTT Wireless Sys. Lab., Kanagawa, Japan

11:00 AM

11:10 AM **WE2A-4:** *InP HBT on Si Substrates with Integral Passive Components: A Wafer Scale Package*
C. Chun, N. Evers, J. Laskar, N. Jokerst, School of ECE, Georgia Inst. of Tech., Atlanta, GA

11:20 AM

11:30 AM **WE2A-5:** *A Si Micromachined Conformal Package for a K-Band Low Noise HEMT Amplifier*
S.V. Robertson, L.P.B. Katehi, EECS Dept., Univ. of Michigan, Ann Arbor, MI, M. Matloubian, M. Case, Hughes Research Labs., Malibu, CA

11:40 AM **WE2A-6:** *Silicon-Based Micromachined Packages for Discrete Components*
R.M. Henderson, L.P.B. Katehi, Rad. Lab., Univ. of Michigan, Ann Arbor, MI

WE2B High Power Sources and Control Components

Chair: J. Goel, TRW

Room A207

WE2B-1: *A 6-18 GHz 20W SPDT Switch Using Shunt Discrete PIN Diodes*
T. Shigematsu, N. Suematsu, Y. Iyama, Info. Tech. R&D Ctr., Mitsubishi Elec. Corp., Kanagawa, Japan, N. Takeuchi, A. Mizobuchi, Comm. Equip. Works, Mitsubishi Elec. Corp., Hyogo, Japan

WE2B-2: *Low Cost Microwave Receiver Protectors/AGC's Using Surface Mount Components*
F. Harris, D. Strac, Northrop Grumman Corp., ESSD, Baltimore, MD

WE2B-3: *An Investigation of GaAs MMIC High Power Limiters for Circuit Protection*
C. Trantanella, M. Pollman, M. Shifrin, Hittite Microwave Corp., Woburn, MA

WE2B-4: *3-Watt Q-Band Waveguide PHEMT MMIC Power Amplifier Module*
J.A. Lester, J. Chi, R. Lai, M. Biedenbender, D. Garske, R. Rordan, P.D. Chow, TRW ES&TD, Redondo Beach, CA

WE2B-5: *Power Combining Port Impedance Model*
M.J. Lee, J.A. Faulkner, Jr., Northrop Grumman Corp., Baltimore, MD

WE2B-6: *A High Conversion Efficiency 5.8 GHz Rectenna*
J. McSpadden, L. Fan, K. Chang, Dept. of EE, Texas A&M Univ., College Station, TX

WE2B-7: *New Type Accelerator for Millimeter and Infrared Electron-Wave Devices*
V.V. Kulish, O.B. Krutko, I.V. Gubanov, Dept. of Theoretical Physics, Sumy State Univ., Sumy, Ukraine, P.B. Kosel, Dept. of ECECS, Univ. of Cincinnati, Cincinnati, OH

WE2C Millimeter and Sub-Millimeter Waves: J.C. Bose Memorial Session

Chair: K. Agarwal, Texas Instruments
Co-chair: J.W. Dees, Georgia Tech

Room A102

WE2C-1: *The Work of Jagadis Chandra Bose: 100 Years of mm-Wave Research*
D.T. Emerson, NRAO, Tucson, AZ

WE2C-2: *Sir J.C. Bose and Radio Science*
A.K. Sen, Institute of Radio Physics and Electronics, Calcutta Univ., Calcutta, India

WE2C-3: *Integrated Micro-Machined Antenna for 200 GHz Operation*
J.W. Digby, G.M. Parkhurst, J.M. Chamberlain, Un. of Nottingham, C.E. Collins, R.D. Pollard, R.E. Miles, D.P. Steenson, Un. of Leeds, B.M. Towlson, L.S. Karatzas, J.W. Bowen, Un. of Reading, N.J. Cronin, Un. of Bath, UK

WE2C-4: *Single-and Dual-Polarized Slot-Ring Subharmonic Receivers*
S. Raman, G.M. Rebeiz, Univ. of Michigan, Ann Arbor, MI

WE2C-5: *Miniature Low Power Submillimeter-Wave Spectrometer for Detection of Water in the Solar System*
O. Boric-Lubecke, Inst. of Phys. & Chem. Research, Sendai, Japan, R.F. Denning, M.A. Janssen, M.A. Frerking, Jet Propulsion Lab., California Inst. of Tech., Pasadena, CA

WE2C-6: *A High-Efficiency Millimeter-Wave Holographic Power Splitter/ Combiner*
M. Shahabadi, K. Schunemann, Tech. Hamburg-Harburg, Hamburg, Germany

WE2D Phased Arrays

Chair: M. Thursby, Florida Institute of Technology

Room A101

WE2D-1: *Low Cost T/R Modules for Planar Arrays*
G. Ferrell, A. Piloto, D. Strack, J. Gipprich, J. Kennedy, D. Heffernan, Northrop Grumman Corp., Baltimore, MD

WE2D-2: *Unaccelerated Reliability Testing for T/R Modules: Need, Methodology and Supporting Data*
B.A. Kopp, T.A. Axness, C.R. Moore, Johns Hopkins APL, Laurel, MD

WE2D-3: *Megalithic Microwave Signal Processing for Phased-Array Beam Forming and Steering*
T. Ohira, Y. Suzuki, H. Ogawa, NTT Wireless Systems Labs., Yokosuka, Japan, H. Kamitsuna, NTT Elec. Tech. Corp.

WE2D-4: *Active Antenna Oscillator Arrays in Communication Systems*
C. Kykkotis, P.S. Hall, H. Ghafouri-Shiraz, School of EEE, Univ. of Birmingham, Birmingham, UK

WE2D-5: *A Polarization Flexible Phased Array Antenna for DCS 1800 SDMA Field Trial*
C. Passmann, G. Villino, T. Wixforth, Robert Bosch GmbH, Hildesheim, Germany

WE2D-6: *Automatic Beam Steered Active Antenna Receiver*
S. Gupta, V.F. Fusco, High Freq. Elec. Lab., Dept. of EEE, Queen's Univ. of Belfast, Belfast, UK

WE2E Guided Waves and Discontinuity Effects

Chair: M. Dydyk, Motorola
Co-chair: S. El-Ghazaly, Arizona State University

Room A108

WE2E-1: *Analysis of the Propagation and Leakage Effects for Various Classes of Traveling-Wave Sources in the Presence of Covering Dielectric Layers*
C. Di Nallo, F. Frezza, A. Galli, P. Lampariello, La Sapienza, Univ. of Rome, Roma, Italy

WE2E-2: *Discontinuity Effects on High Frequency Transistors*
M.A. Megahed, Peregrine Semicond. Corp., San Diego, CA, S.M. El-Ghazaly, Arizona State Univ., Tempe, AZ

WE2E-3: *Characterization of Power Loss from Discontinuities in Guided Structures*
T.K. Sarkar, Z.A. Maricevic, Dept. of EECS, Syracuse Univ., Syracuse, NY, M. Salazar-Palma, Univ. Poli. Madrid, Madrid, Spain

WE2E-4: *Analysis of Unbounded and Bounded Circuits and Antennas Considering Finite Extent and Inhomogeneous Dielectric*
X. Jiang, K. Wu, POLY-GRAMES Research Ctr., Ecole Polytech. de Montreal, Quebec, Canada