

Table of Contents

Technical Program

WEDNESDAY, JUNE 4

OPENING SESSION

- 1330 Welcome—R. Sudbury, Symposium Chairman
Y. Ayasli, Technical Program Chairman
- 1345 “DOD Microwave and Millimeter-Wave Monolithic Integrated Circuits (MIMIC) Program (Invited),” E. Maynard, *DOD OUSDRE, Washington, DC* 1

SESSION I. MICROWAVE AMPLIFIERS

Chairman: R. Gold, *Adams-Russell Co., Burlington, MA*

Co-Chairman: V. Nair, *Motorola, Inc., Phoenix, AZ*

- 1415 Chairman's Introduction
- 1420 “High Performance Monolithic Power Amplifier Using a Unique Ion Implantation Process,” S. K. Wang, K. G. Wang, and C. D. Chang, *Hughes Aircraft Co., Torrance, CA* 5
- 1440 “A Low Cost, 3-7 GHz, 1/2 Watt MMIC GaAs Amplifier,” S. B. Moghe and R. Genin, *Pacific Monolithics, Sunnyvale, CA* 9
- 1520 “A Power Distributed Amplifier Using Constant-R Networks,” E. M. Chase and W. Kennan, *Avantek, Inc., Santa Clara, CA* 13
- 1540 “A Stable 2-26.5 GHz Two-Stage Dual-Gate Distributed MMIC Amplifier,” J. Orr, *Hewlett-Packard Co., Santa Rosa, CA* 19
- 1600 “A High Gain, Monolithic Distributed Amplifier Using Cascode Active Elements,” R. Larue, S. Bandy, and G. Zdasiuk, *Varian Associates, Palo Alto, CA* 23
- 1620 “A High Performance 2-18.5 GHz Distributed Amplifier, Theory and Experiment,” T. McKay, *Teledyne MMIC, Mountain View, CA*; R. Williams, *Texas Instruments, Dallas, TX* 27

THURSDAY, JUNE 5

SESSION II. OPTICAL COMMUNICATIONS

Chairman: Alejandro Chu, *M/A-Com, Inc., Burlington, MA*

Co-Chairman: Douglas E. Holmes, *Rockwell International Corporation, Thousand Oaks, CA*

- 0830 Chairman's Introduction
- 0835 “Optical Technology for Microwave Applications (Invited),” Huan-Wun Yen, *Hughes Research Labs, Malibu, CA* 33

0905	“A High Speed GaAs Monolithic Transimpedance Amplifier,” I. Bahl and E. Griffin, <i>ITT GaAs Technology Center, Roanoke, VA; W. Powell and C. Ring, ITT Telecom, Raleigh, NC</i>	35
0925	“Monolithic Optoelectronic Receiver for Gbit Operation,” S. Ray and M. Walton, <i>Honeywell Physical Science Centers, Bloomington, MN</i>	39

SESSION III. MILLIMETER-WAVE INTEGRATED CIRCUITS & MICROWAVE RECEIVERS

Chairman: Paul H. Carr, *Rome Air Development Center, Hanscom AFB, MA*

Co-Chairman: Chente Chao, *Honeywell, Inc., Bloomington, MN*

1005	Chairman’s Introduction	
1010	“A 30GHz Monolithic Receiver,” L. C. T. Liu, C. S. Liu, J. R. Kessler, and S. K. Wang, <i>Hughes Aircraft Co., Torrance, CA</i>	41
1030	“30 GHz Monolithic Balanced Mixers Using An Ion Implanted FET-Compatible 3-Inch GaAs Wafer Process Technology,” P. Bauhahn, T. Contolatis, and V. Sokolov, <i>Honeywell, Inc., Bloomington, MN</i>	45
1050	“A W-Band Monolithic PIN Diode Switch,” G. H. Nesbit, D. W. Wong, D. Li, and J. C. Chen, <i>Hughes Aircraft Co., Torrance, CA</i>	51
1110	“High Volume, Low Cost, MMIC Receiver Front End,” W. W. Nelson and A. F. Podell, <i>Pacific Monolithics, Sunnyvale, CA</i>	57
1130	“Cost-Effective High Performance Monolithic X-Band Low Noise Amplifier,” D. C. Wang, R. G. Pauley, S. K. Wang, and L. C. T. Liu, <i>Hughes Aircraft Co., Torrance, CA</i>	61

SESSION IV. SWITCHING & CONTROL CIRCUITS

Chairman: Eric Strid, *Motorola, Inc., Phoenix, AZ*

Co-Chairman: Allen Podell, *Pacific Monolithics, Sunnyvale, CA*

1300	Chairman’s Introduction	
1305	“Fabrication of Low-Power, High-Speed GaAs LSI On-Board Baseband Switching Marix,” R. Yamamoto, K. Ueda, H. Nagao, T. Morimura, I. Eguchi, M. Kudoh, K. Kinuhata, and P. Nuspl, <i>NEC, Kawasaki, Japan</i>	65
1325	“GaAs Phase-Coherent Microwave Multiple-Signal Generation Rising All-Pass Networks,” S. K. Altes, T. H. Chen, and L. J. Ragonese, <i>General Electric Co., Syracuse, NY</i>	71
1345	“A 2 to 8 GHz Leveling Loop Using a GaAs MMIC Active Splitter and Attenuator,” G. S. Barta, K. E. Jones, G. C. Herrick, and E. W. Strid, <i>TriQuint Semiconductor, Inc., Beaverton, OR</i>	75

SESSION V. MMIC TECHNOLOGY

Chairman: Ho Huang, *COMSAT Labs Clarksburg, MD*

Co-Chairman: David Meharry, *Sanders Associates, Nashua, NH*

1400 Chairman's Introduction

- 1410** "GHz Ultra High Frequency Dividers with Advanced SAINTS FETs," K. Osafune, T. Enoki, K. Yamasaki, and K. Ohwada, *NTT Electrical Communications Laboratories, Kanagawa, Japan* 81
- 1430** "A Closed-Form Expression for Representing the Distributed Nature of the Spiral Inductor," D. Krafcsik and D. Dawson, *Westinghouse ATL, Linthicum, MD* 87
- 1520** "Silicon High Resistivity Substrate Millimeter-Wave Circuit Technology," K. M. Strohm and E. Kasper, *AEG Research Center Ulm, Ulm, FRG*; J. Buechler and P. Russer, *Lehrstuhl für Hochfrequenztechnik, Technische Universität München, München 2, FRG* 93
- 1540** "Low Noise, Microwave HIFET Using MOCVD," H. Takakuwa, K. Tanaka, K. Togashi, H. Ohke, M. Kanazawa, and Y. Kato, *Sony Corporation, Kanagawa, Japan* 99
- 1600** "Planar MMIC Hybrid Circuit and Frequency Converter," T. Hirota, H. Ogawa, Y. Tarusawa, and K. Owada, *NTT Electrical Communications Labs, Yokosuka, Japan* 103