

1965 G-MTT SYMPOSIUM TECHNICAL PROGRAM WEDNESDAY, MAY 5, 1965

9:00 - 9:30 Introductory Session

WELCOMING REMARKS

R. E. Henning, Chairman, Steering Committee, 1965 G-MTT Symposium

H. M. Altschuler, Chairman, G-MTT Administrative Committee

KEYNOTE ADDRESS - SPACE FOR MICROWAVES

D. D. King, Director, Electronics Research Laboratory, Aerospace Corporation, Los Angeles, California

9:30 - 12:00 Session I - Optical Waveguides and Resonators

Chairman James C. Wiltse
Martin Company, Orlando, Florida

- 1 I-1 THEORY OF A THERMAL-GRADIENT GAS LENS, D. Marcuse, Bell Telephone Laboratories, Holmdel, New Jersey
- 2 I-2 MEASUREMENTS ON A THERMAL GRADIENT GAS LENS, William H. Steier, Bell Telephone Laboratories, Holmdel, New Jersey

COFFEE BREAK

- x I-3 LIGHT BEAM PROPAGATION IN CURVED SCHLIEREN GUIDES, H. G. Unger, Technische Hochschule Braunschweig, Germany, Visiting at the University of Wisconsin, Madison, Wisconsin
- 3 I-4 MODES IN RADIAL WAVEBEAM RESONATORS, G. Goubau and F. Schwing, U. S. Army Electronics Research and Development Laboratories, Fort Monmouth, New Jersey
- I-5 RAY THEORY OF RESONATORS AND BEAM WAVEGUIDES WITH AN INHOMOGENEOUS MEDIUM, W. K. Kahn, Polytechnic Institute of Brooklyn, Brooklyn, New York
- I-6 RAYLEIGH DISTANCE AS A NORMALIZING RANGE FOR BEAM POWER TRANSMISSION, John F. Ramsay, Airborne Instruments Laboratory, Deer Park, New York

2:00 - 5:10 Session II - Filter Techniques

Chairman: Nathan Lipetz

U. S. Army Electronics Research and Development Laboratories, Fort Monmouth, New Jersey

- II-1 WIDEBAND INTERDIGITAL FILTERS WITH CAPACITIVELY LOADED RESONATORS, Lloyd A. Robinson, Stanford Research Institute, Menlo Park, California
- II-2 EQUALIZATION OF WAVEGUIDE DELAY DISTORTION, Eugene N. Torgow, Rantec Corporation, Calabasas, California

- II-3 CIRCULAR TE_{011} -MODE, TRAPPED-MODE BANDPASS FILTERS, G. L. Matthaei, University of California, Santa Barbara, California, and D. B. Weller, Stanford Research Institute, Menlo Park, California
- II-4 MICROWAVE FILTERS CONTAINING HIGH-Q DIELECTRIC RESONATORS, Seymour B. Cohn, Rantec Corporation, Calabasas, California

COFFEE BREAK

- II-5 OPTIMUM MULTIPOLE QUARTER-WAVE TEM FILTERS, M. C. Horton and R. J. Wenzel, The Bendix Corporation, Southfield, Michigan
- II-6 WIDEBAND VARACTOR HARMONIC MULTIPLIERS, R. J. Wenzel, The Bendix Corporation, Southfield, Michigan
- II-7 FILTER-DIODE INTEGRATION, F. S. Coale and P. M. LaTourrette, Melabs, Palo Alto, California
- II-8 WIDEBAND POLARIZER IN CIRCULAR WAVEGUIDE LOADED WITH DIELECTRIC DISCS, Paul J. Meier and Sidney Arnow, Wheeler Laboratories, Great Neck, New York

THURSDAY, MAY 6, 1965

9:00 - 12:20 Session III - Semiconductor Devices

Chairman: James J. Gallagher
Martin Company, Orlando, Florida

- III-1 PROGRESS IN SOLID STATE MICROWAVE POWER SOURCES, F. Sterzer, Radio Corporation of America, Princeton, New Jersey
- III-2 MICROWAVE TRANSISTOR AMPLIFIER DESIGN, B. T. Vincent, Jr., Texas Instruments, Inc., Dallas, Texas
- III-3 FREQUENCY MULTIPLICATION WITH THE STEP RECOVERY DIODE, Robert D. Hall, Hewlett-Packard Associates, Palo Alto, California

COFFEE BREAK

- III-4 LOW-LEVEL LIMITING UTILIZING IMPACT IONIZATION IN BULK GERMANIUM AT 4.2°K, W. W. Heinz and S. Okwit, Airborne Instruments Laboratory, Deer Park, New York
- III-5 A NEW MILLIMETER MIXER USING BULK SEMICONDUCTOR (AND ITS RADIO FREQUENCY BOLOMETRIC PROTOTYPE), F. Arams, E. Sard, C. Allen, and B. Peyton, Airborne Instruments Laboratory, Deer Park, New York
- III-6 A LOW NOISE FIGURE 94 GC GALLIUM ARSENIDE MIXER DIODE, Richard J. Bauer, Advanced Technology Corporation, Timonium, Maryland
- III-7 AN ELECTRICALLY-TUNED PARAMETRIC AMPLIFIER, K. L. Kotzebue, University of California, Santa Barbara, California, and L. B. Fletcher, Watkins-Johnson Company, Palo Alto, California
- III-8 MICROSTRIP TRANSMISSION ON SEMICONDUCTOR DIELECTRICS, Tom M. Hyltin, Texas Instruments, Inc., Dallas, Texas

2:00 - 5:00 Session IV - Components for Phased Arrays

Chairman: Samuel J. Rabinowitz

Advanced Research Projects Agency, Washington, D. C.

- IV-1 TRENDS IN PHASED ARRAYS, J. L. Allen, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, Massachusetts
- IV-2 A DIGITAL LATCHING FERRITE STRIP TRANSMISSION LINE PHASE SHIFTER, L. R. Whicker and R. R. Jones, Westinghouse Electric Corporation, Baltimore, Maryland
- IV-3 FERRITE DIGITAL PHASE SHIFTERS, D. R. Taft, J. W. Simon, and J. D. Sweeney, Sperry Microwave Electronics Company, Clearwater, Florida

COFFEE BREAK

- IV-4 A FOUR-BIT LATCHING FERRITE SWITCH, D. H. Landry and W. C. Passaro, Sperry Microwave Electronics Company, Clearwater, Florida
- IV-5 A LATCHING FERRITE JUNCTION CIRCULATOR FOR PHASED ARRAY SWITCHING APPLICATIONS, P. C. Goodman, The Bendix Corporation, Southfield, Michigan
- IV-6 A HIGH-POWER PHASE SHIFTER FOR PHASED ARRAY SYSTEMS, W. P. Clark, Hughes Aircraft Company, Fullerton, California
- IV-7 APPLICATION OF THE BUTLER MATRIX TO HIGH-POWER MULTICHANNEL SWITCHING, Richard S. Davis and Helmut E. Schrank, Westinghouse Defense and Space Center, Baltimore, Maryland

FRIDAY, MAY 7, 1965

9:00 - 12:05 Session V - Components

Chairman: B. J. Duncan

Sperry Microwave Electronics Company, Clearwater, Florida

- V-1 THEORETICAL ANALYSIS OF TWIN SLAB PHASE SHIFTERS IN RECTANGULAR WAVEGUIDE, Ernst Schlömann, Raytheon Research Division, Waltham, Massachusetts
- V-2 BROADBAND STRIP TRANSMISSION LINE UHF CIRCULATORS, J. W. Simon, Sperry Microwave Electronics Company, Clearwater, Florida
- V-3 NEW DESIGN TECHNIQUES FOR MINIATURE VHF CIRCULATORS, V. E. Dunn and R. W. Roberts, Melabs, Palo Alto, California
- V-4 ADVANCED FERRITE DUPLEXING-LIMITING TECHNIQUES, J. E. Andrews, J. L. Brediger, and D. H. Landry, Sperry Microwave Electronics Company, Clearwater, Florida

COFFEE BREAK

- V-5 A HIGH-POWER X-BAND LIMITER, E. Wantuch and M. King, Litton Precision Products, Inc., Morris Plains, New Jersey
- V-6 OVERSIZE WAVEGUIDE QUASIOPTICAL FERRITE DEVICES, H. J. Hindin and J. J. Taub, Airborne Instruments Laboratory, Deer Park, New York

- V-7 A FERROELECTRIC MICROWAVE SWITCH, J. W. Amoss and L. J. Lavedan, Sperry Microwave Electronics Company, Clearwater, Florida, M. R. Donaldson, University of South Florida, Tampa, Florida, and A. L. Stanford, Georgia Institute of Technology, Atlanta, Georgia
- V-8 DESIGN CONSIDERATIONS FOR MICROWAVE ACOUSTIC DELAY DEVICES, J. R. Yaeger and F. A. Olson, Microwave Electronics Corporation, Palo Alto, California
- V-9 SUPPRESSION OF MULTIPLE PASS SIGNALS FROM MICROWAVE ACOUSTIC DELAY LINES, H. A. Willing and G. P. Rodrigue, Sperry Microwave Electronics Company, Clearwater, Florida
- V-10 UHF MAGNETOACOUSTIC DELAY LINE, W. Skudera, R. Sproat, I. Bady, and E. Gikow, U. S. Army Electronics Research and Development Laboratories, Fort Monmouth, New Jersey

1:30 - 4:30 Session VI - Components and Measurements

Chairman: L. Lewin

Standard Telecommunications Laboratories, Harlow, England

- VI-1 MONOPULSE COMPARATOR NETWORKS FOR MULTIOCTAVE OPERATION, Richard Van Wagoner, Radiation Systems, Incorporated, Alexandria, Virginia, and Paul Shelton, Institute for Defense Analyses, Arlington, Virginia
- VI-2 TECHNIQUES FOR PROVIDING TWM'S WITH WIDE INSTANTANEOUS BANDWIDTHS, J. A. DeGruyl, S. Okwit, and J. G. Smith, Airborne Instruments Laboratory, Deer Park, New York
- VI-3 IMPEDANCE AND ATTENUATION OF TRANSMISSION LINES SUPPORTING TEM-MODE, M. V. Schneider, Bell Telephone Laboratories, Holmdel, New Jersey
- VI-4 THE ARC LOSS OF MULTIMEGAWATT GAS DISCHARGE DUPLEXERS, C. S. Ward, Microwave Associates, Inc., Burlington, Massachusetts
- VI-5 A SUPERHETERODYNE 600 GC RADIOMETER RECEIVER, R. F. Packard, Advanced Technology Corporation, Timonium, Maryland
- VI-6 PREDICTION AND MEASUREMENT OF OSCILLATOR FREQUENCY MODULATION UNDER RANDOM VIBRATION, J. Robert Ashley and Clifford B. Searles, Sperry Electronic Tube Division, Gainesville, Florida
- VI-7 INTERPRETATION OF INTERACTION OF FABRY-PEROT RESONATOR FIELDS WITH PLASMAS, D. H. Auston, R. I. Primich, and R. A. Hayami, General Motors Defense Research Laboratories, Santa Barbara, California
- VI-8 A SIMPLE METHOD FOR PRECISE PHASE SHIFT MEASUREMENT, C. F. Augustine, Weinschel Engineering Company, Inc., Gaithersburg, Maryland
- VI-9 THE AUTOMATIC PHASING SYSTEM FOR THE STANFORD TWO-MILE LINEAR ELECTRON ACCELERATOR, C. B. Williams, A. R. Wilmunder, J. Dobson, H. A. Hogg, M. J. Lee, and G. A. Loew, Stanford Linear Accelerator Center, Stanford University, Stanford, California

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