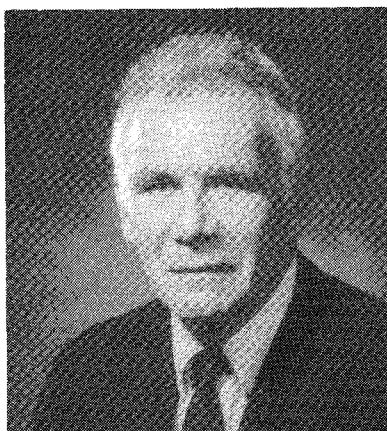


## MICROWAVE CAREER AWARD



### Marion E. Hines

For a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques.

Marion E. Hines was born on November 30, 1918 in Bellingham, Washington. He received a B.S. degree in Applied Physics in 1940 from the California Institute of Technology. He joined the U.S. Army Air Force in 1940 and served as a weather officer throughout the war. He returned to Cal Tech and received an M.S. in Electrical Engineering in 1946. Further part-time graduate study in Physics was done in 1947-1948 at Columbia University. He was married in 1947 to Miss Julie Warren Viele of Buffalo, New York. They have 3 (now adult) children.

From 1946 to 1960 he was a member of the Technical Staff at Bell Telephone Laboratories. Until 1956 he worked with traveling-wave tubes, microwave triodes and digital storage tubes, making contributions to beam focusing, amplification theory, and practical tube development. In 1956 his interest shifted to semiconductor devices. In 1957 (with H. E. Elder) he demonstrated the first negative-resistance varactor parametric amplifier. In 1960 he published an important paper on the microwave properties of tunnel diodes.

In 1960 he joined Microwave Associates, Inc. In the period to 1963, he and his co-workers established many of the fundamental principles of varactor harmonic generation and developed numerous practical microwave power sources using this principle. This led to the introduction of all-solid-state microwave communications systems by Microwave Associates in the mid 60's. In 1964 he published a fundamental paper on microwave switching and phase shifting using semiconductor diodes. This led to the development of practical pulsed megawatt duplexers, multi-kilowatt phase shifters and power switches, now extensively used for RADAR. From 1965 to 1974 he concentrated on IMPATT and Gunn-effect diodes, making important contributions to a quantitative understanding of their electron dynamics and to their application as microwave oscillators and amplifiers. These include the small-signal impedance theory (1966); small signal noise theory (1966); nonlinear effects in oscillators and power amplifiers (1970); and large signal noise, instabilities and intermodulation (1972).

He diversified further, after 1970, publishing papers on stripline propagation using ferrite, computer aided microwave network analysis, phase-locked power amplification, and mixer theory.

Mr. Hines has contributed more than 50 technical papers and oral presentations. He holds more than 40 patents. He was made a fellow of the IEEE in 1968. He received a "best paper" award from the ISSCC in 1967. He received the microwave prize for his 1971 paper on ferrite propagation, and again as a co-author in 1978 for a paper on phase-locked amplification. In 1976 he was given the J. J. Ebers Award of the IEEE Electron Devices Society. He has been awarded the 1983 Lamme Medal of the IEEE.

At present he is Vice President and Chief Scientist for the M/A-COM Corporate Technology Center. He is now working on CAD techniques for microwave network synthesis and equalization, and on IMPATT diode power amplification and combining.

## MICROWAVE APPLICATIONS AWARD



### Les Besser

"For development and application of COMPACT, a microwave design program".

Les Besser received his BS from the University of Colorado, majoring in EE and Business Administration, where he was awarded the "Outstanding Engineering Student" title. He also holds an MSEE degree from the University of Santa Clara. From 1966 to 1970, he was with Hewlett Packard Company, working on the development of broadband thin-film microwave components and conducted seminars on scattering parameter design techniques. In 1970, he joined the Microwave Division of Fairchild where he became the Manager of Circuit Development, concentrating on MIC's, CATV Systems and Low Noise GaAs FET Amplifiers. Between 1972 and 1976 he was directing the Microcircuit Design and Development at Farinon Electric.

Mr. Besser was the founder and President of Compact Engineering, a firm that provided software and seminars to microwave design engineers. In 1980 his firm merged with Communication Satellite Corporation to form the foundation of Comsat General Integrated Systems. Mr. Besser then became Senior Vice President and was the COO of the Palo Alto Operations. He stepped down from that position at the end of 1982 but remained with CGIS in the capacity of a consultant. He is the author of two major general purpose microwave circuit optimization programs, SPEEDY and COMPACT. He has published over fifty papers and articles on modern computer-aided circuit design and was a contributing author of two books — Electronic Measurements and Instrumentation, McGraw Hill, 1971; Computer-Aided Design of Microwave Circuits, Artech House, 1981. He holds the basic patent for the first thin-film amplifier circuit used in the CATV industry. He has also been active in a one-week continuing educational seminar entitled Modern Microwave Circuit Design. Mr. Besser organized the courses in 1976 at UCLA; since then over 1000 practicing engineers have attended this course.

Mr. Besser is a member of Sigma Tau, Tau Beta Pi, Eta Kappa Nu honorary societies, and a Senior Member of the IEEE. He was listed in the "Who's Who Among Students in American Colleges and Universities" as well as "Who's Who in the West". He was the past Chairman of the San Francisco Bay Area Chapter of the IEEE Circuits and Systems Society, as well as the MTT Society, organizing several weekend seminars within both societies.

## 1983 MTT-S MICROWAVE PRIZE

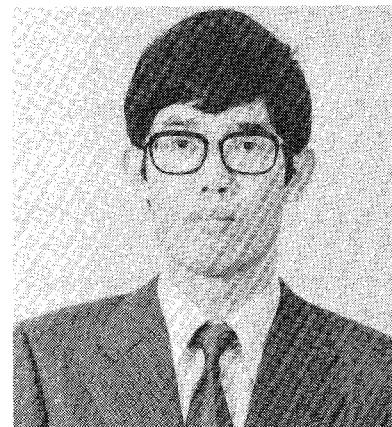
KAZUHIKO HONJO and YOICHIRO TAKAYAMA for their paper "GaAs FET Ultra Broadband Amplifiers For GBIT/S Data Rate Systems" IEEE Transactions on Microwave Theory and Techniques, Vol. MTT-29, No. 7, July 1981, pp. 629-636.



Kazuhiko Honjo (M'82) was born in Saitama, Japan, on October 28, 1951. He received the B.E. degree from the University of Electrocommunications, Tokyo, Japan and the M.E. degree from the Tokyo Institute of Technology, Tokyo, Japan, both in electrical engineering, in 1974 and 1976, respectively.

He joined the Central Research Laboratories, Nippon Electric Co., Ltd., Kawasaki, Japan, in 1976. He has been engaged in the research and development of TRAPATT oscillators, high-power GaAs FET amplifiers and ultra-broadband GaAs FET amplifiers, and is presently concerned with GaAs monolithic IC's.

Mr. Honjo is a member of Institute of Electronics and Communications Engineers of Japan.



Yoichiro Takayama (M'72) was born in Kanagawa, Japan, on January 3, 1942. He received the B.E., M.E., and Dr. Eng. degrees from Osaka University, Osaka, in 1965, 1967 and 1973, respectively.

He joined the Nippon Electric Co., Ltd., Kawasaki, Japan, in 1967 and is now Research Manager of the Ultra High Speed Device Research Laboratory, Microelectronics Research Laboratories. He has been engaged in the research and development of microwave solid-state oscillators, amplifiers, modulators and sensors. He is now leading GaAs IC and FET research group.

Dr. Takayama is a member of Institute of Electronics and Communication Engineers of Japan.

## **DISTINGUISHED SERVICE AWARD**



### **Theodore S. Saad**

**"For his outstanding and dedicated service to the society".**

Mr. Saad has been working as a microwave engineer from the time he graduated from M.I.T. in 1941 to the present, except for a six month period, immediately after graduation. His main efforts have been in the design and development of passive microwave components. For this work, he has obtained 16 patents. He spent four years at M.I.T. Radiation Laboratory as a research associate, four years at the Submarine Signal Company, four years at Microwave Development Laboratories as Vice President and Chief Engineer, and a year at Sylvania. In early 1955, Mr. Saad became co-founder, President, and Chairman of the Board of Sage Laboratories, Inc., which positions he still holds. In 1958, Mr. Saad was a co-founder of Horizon House Microwave, Inc., which publishes "The Microwave Journal". He was also a co-founder of Artech House, which publishes technical books. He is presently a consulting editor of the *Microwave Journal*.

Mr. Saad is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE). He has been a member of the National Administrative Committee of the IEEE Microwave Theory and Techniques Society since 1953. He has been Editor of the Transactions of MTT, Editor of the Newsletter, and Vice Chairman and Chairman of the National Administrative Committee. He was the 1972 National Lecturer. He was made an Honorary Life Member in 1973. He is the MTT-S Historian and curator of its Historical Collection. He is also an active member of the IEEE and is presently Chairman of the Public Information Committee and a member of the Electro Board. He was Electro Board Chairman in 1980.

For four years he was a member of the National Academy of Sciences Panel, advisory to the Radio Standards Engineering Division of the Institute for Basic Standards of the National Bureau of Standards. He was Chairman in 1969 and 1970.

He was Chairman of the Board of the South Middlesex Area Chamber of Commerce of Massachusetts in 1977 and 1978.

He is a member of the Board of the Commonwealth Gas Company of Massachusetts.

He was Chairman and is presently Vice Chairman of the Board of Family Health Plan of Massachusetts.