

## **Linearization: Reducing Distortion in Power Amplifiers**

By Allen Katz

The College of New Jersey/Linearizer Technology, Inc.

Our society's need to exchange greater and greater amounts of information has created an unprecedented demand for highly linear power amplifiers. High linearity is required for the spectrally efficient transmission of information. This presentation will discuss techniques for the cancellation of distortion that are also known as linearization. Different methods of linearization including digital approaches will be introduced and compared. The linearization of solid-state power amplifiers, traveling wave tube amplifiers and klystron power amplifiers will be considered. Criteria for the evaluation of linearity will be reviewed and special attention given to problems unique to SSPAs.



Dr. Allen Katz is a professor of Electrical Engineering at The College of New Jersey. He has more than 25 years of experience in the microwave and satellite industries. He received a Doctorate of Science and Baccalaureate degrees in Electrical Engineering from New Jersey Institute of Technology and a Masters of Science in Electrical Engineering from Rutgers University. His work spans the frequency range from UHF to above Ka-band and has involved both hybrid and MMIC circuits including the design of the first practical MMIC linearizer. He holds 16 patents and has written more than 75 technical publications. He is founder and President of Linearizer Technology, Inc., a New Jersey based company dedicated exclusively to distortion correction.

Dr. Katz is a Fellow of the IEEE and a past Microwave Theory and Techniques (MTT) Society Distinguished Lecturer. He organized MTT Workshops on Linearization Techniques in 1988, 1998 and 2004. He received the William Randolph Lovelace II Award for outstanding contributions to space science and technology from the American Astronautical Society and in 2002, the IEEE Region I Achievement Award in 2001 and 1992, an IEEE Third Millennium Medal in 2000, the Martin Marietta Astro Inventor of the year award in 1993, an IEEE Centennial Medal in 1984, the John Chambers Award in 1982, and the ASEE Western Electric Fund Outstanding Engineering Educator Award in 1979. He is a member of the Eta Kappa Nu, Tau Beta Pi and Phi Kappa Phi Honor Societies.