Abstracts

A Reflective Diode Linearize for Spacecraft Applications

A. Katz, R. Sudarsanam and D. Aubert. "A Reflective Diode Linearize for Spacecraft Applications." 1985 MTT-S International Microwave Symposium Digest 85.1 (1985 [MWSYM]): 661-664.

There is an increasing interest in the use of predistortion linearizes to improve Carrier-to-Intermodulation ratios (C/I) of spacecraft power amplifiers. This paper describes a Ku band reflective diode linearizer designed to provide high reliability and to function over the changing environmental conditions required for space applications. This linearize is electrically tunable to allow its characteristics to be easily trimmed to compensate for the different non-linearities of a variety of amplifiers. When used in conjunction with a TWTA, it is is capable of providing a two-tone C/I of 30 dB or an improvement of greater than 10 dB over the critical power back-off range from -3 to -8 dB. Both two and multi-tone C/I performance are reported and the performance degradations of aging, temperature and bandwith are discussed.

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