Abstracts

Design Technique for MESFET Mixers for Maximum Conversion Gain

M.J. Rosario and J.C. Freire. "Design Technique for MESFET Mixers for Maximum Conversion Gain." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 1972-1979.

A design technique for MESFET mixers is described. This technique is based on a mixer analysis program (MIXAN) designed to obtain the value of conversion gain and evaluate the influence of the embedding impedances for any local oscillator power and dc bias, in order to optimize the mixer performance. The MIXAN program, which uses SPICE as a "subroutine" to determine large-signal current and voltage waveforms, is able to obtain the operating conditions for maximum conversion gain. The good agreement between experimental and simulation results for X-band drain and gate mixers proves the validity of the design technique.

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