Abstracts

Measurement of the Cross Correlation Between Baseband and Transposed Flicker Noises in a GaAs MESFET

P.A. Dallas and J.K.A. Everard. "Measurement of the Cross Correlation Between Baseband and Transposed Flicker Noises in a GaAs MESFET." 1990 MTT-S International Microwave Symposium Digest 90.3 (1990 Vol. III [MWSYM]): 1261-1264.

When an R.F. carrier is amplified by a GaAs MESFET, amplitude modulation (A. M.) and phase modulation (P. M.) noises are imposed on the carrier. This is generally believed to be caused by transposition to the carrier frequency of the low frequency flicker noise generated by the FET. The cross correlation between the A.M. and P.M. noises and the low frequency (L.F.) noise observed on the drain of the FET is measured. While the A.M. noise and the low frequency noise on the drain of the FET exhibit a high degree of correlation, the P.M. noise and the low frequency drain noise are not highly correlated. The latter result may explain the limited success of oscillator phase noise reduction methods which rely on the existence of a large cross correlation between the P.M. and low frequency noises.

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