Abstracts

A New Method of Reducing Phase Noise in GaAs FET Oscillators

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This paper addresses the problem of I/f FM noise reduction in GaAs MESFET oscillators from circuit design considerations. The near-carrier FM noise is described with the aid of an analytic model that includes in-band and upconversion expressions. Variations in these terms are investigated as a function of circuit impedance. In particular, the bias impedance is observed to significantly affect the FM noise of the oscillator, primarily through the upconversion process. Techniques for noise reduction and experimental results are presented.

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