Abstracts

Nonlinear Noise Theory for Synchronized Oscillators

K.F. Schunemann and K. Behm. "Nonlinear Noise Theory for Synchronized Oscillators." 1979 Transactions on Microwave Theory and Techniques 27.5 (May 1979 [T-MTT] (Special Issue on Solid-State Microwave/Millimeter-Wave Power Generation, Amplification, and Control)): 452-458.

A nonlinear theory of noise in synchronized oscillators is outlined, thus extending Kurokawa's work from small to arbitrary injection levels. The description is of phenomenological nature: it uses the describing function method of control theory for calculating the carrier waves, and the circuit theory of periodically driven nonlinear systems for an analysis of the noise sidebands. Simple expressions are derived for the various output noise and noise conversion factors in the case when the nonlinear characteristic of the active device can be described by a third-order (van-der-Pol) polynomial.

❑ Return to main document.