Abstracts

Nonlinear effects in oscillators and synthesizers

U.L. Rohde. "Nonlinear effects in oscillators and synthesizers." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 689-692 vol.2.

The author shows existing problems in VCO's and synthesizers due to the nonlinearities in the active device. He proposes design guidelines to minimize such effects in oscillators by using nonlinear design tools. In synthesizers, the reference frequency and its harmonics mix with the output frequency in the phase detector and cause spurious signals. A new method is proposed to introduce a synchronized jitter in the reference, which will remove these spurious frequencies far enough outside the loop bandwidth to be suppressed by at least 90 dB.

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