

Abstracts

Tuning Speed Limitations in Wide-Band Varactor-Tuned Oscillators

D.F. Peterson. "Tuning Speed Limitations in Wide-Band Varactor-Tuned Oscillators." 1978 MTT-S International Microwave Symposium Digest 78.1 (1978 [MWSYM]): 297-299.

A technique for studying the transient behavior and tuning speed limitations on wide-band voltage-controlled varactor-tuned oscillators is presented. Analysis of a representative oscillator circuit identifies performance limitations and the tradeoffs between tuning speed, tuning bandwidth, RF power variation and tuning capacitance requirements that can be expected. Experimental results on a 2 to 4 GHz transistor oscillator are presented, indicating 2 ns frequency rise times and associated slew rates of 600 MHz/ns, in good agreement with the theory.

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