Abstracts

State-Space Analysis of a Magnetically Tuned IMPATT Oscillator Lumped Model (Short Papers)

I.J.H.S. Moore and J.A.C. Stewart. "State-Space Analysis of a Magnetically Tuned IMPATT Oscillator Lumped Model (Short Papers)." 1973 Transactions on Microwave Theory and Techniques 21.6 (Jun. 1973 [T-MTT]): 422-425.

One method of frequency modulating an IMPATT-diode oscillator uses a ferrite whose susceptibility is a function of applied dc magnetic field. Octave band tuning of Gunn oscillators using yttrium garnet (YIG) has been reported by several authors. YIG comprised the principal energy-storage element apart from active device. For applications requiring relatively small frequency deviations (500 MHz), a YIG sphere can be used to perturb resonant frequency of the oscillator cavity, and hence to vary oscillation frequency. This short paper describes the derivation analysis of a lumped model of the YIG tuned cavity IMPATT oscillator.

❑ Return to main document.