Abstracts

A HEMT Harmonic Oscillator Stabilized by an X-Band Dielectric Resonator

R. Tupynamba, E. Camargo and F.S. Correra. "A HEMT Harmonic Oscillator Stabilized by an X-Band Dielectric Resonator." 1991 MTT-S International Microwave Symposium Digest 91.1 (1991 Vol. I [MWSYM]): 277-280.

A simple design method for harmonic oscillators using HEMT devices is presented. The method employs non-linear analysis to derive the harmonic components of the drain current of a low frequency transistor model. The resulting harmonics components are then used to linearize a high frequency model and to synthezise the microwave circuit. The performance of a second harmonic oscillator that uses an X -Band dielectric resonator and a packaged HEMT device is +6.0 dBm output power at 18 GHz with 6.5 % RF/DC efficiency.

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