Abstracts

18 GHz Reverse Channel HEMT Oscillator

F.S. Correra and E. Camargo. "18 GHz Reverse Channel HEMT Oscillator." 1990 MTT-S International Microwave Symposium Digest 90.1 (1990 Vol. I [MWSYM]): 423-426.

A simple analytical equation is proposed for describing the HEMT drain current, has been implemented at the SPICE simulator. It accurately modeled the HEMT transconductance compression, was applied to non-linear circuit simulation without convergence problems. Using this equation an oscillator design approach combining linear, non-linear analysis was used to design a DRO operating at 18 GHz employing a HEMT in the reverse channel configuration. The performance of the oscillator constructed confirmed the main results predicted by the simulations. The oscillator constructed generated + 11 dBm at 18 GHz, and the circuit/device interaction predicted by the simulation was experimentally confirmed.

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