Abstracts

Ka-band and MMIC pHEMT-based VCO's with low phase-noise properties

P.J. Garner, M.J. Howes and C.M. Snowden. "Ka-band and MMIC pHEMT-based VCO's with low phase-noise properties." 1998 Transactions on Microwave Theory and Techniques 46.10 (Oct. 1998, Part II [T-MTT] (Special Issue on New Developments in the Design of Microwave and Millimeter-Wave Oscillators)): 1531-1536.

Two pseudomorphic high electron-mobility transistor (pHEMT)-based Ka-band voltage-controlled oscillators (VCO's), which have exhibited novel close-to-carrier phase-noise properties in conjunction with output powers greater than previously reported heterojunction bipolar transistor (HBT) based oscillators, are presented in this paper. Good low phase noises of at least -70 and -75 dBc/Hz at an offset of 100 kHz around 38 GHz have been measured for the two different VCO designs over reasonable frequency tuning ranges with flat or linear output-power tuning in these ranges. Both designs show a strong dependence between phase noise and tuning-element bias conditions.

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