# Abstracts

## Balanced monolithic oscillators at K- and Ka-band

*Kian Sen Ang, M.J. Underhill and I.D. Robertson. "Balanced monolithic oscillators at K- and Ka-band." 2000 Transactions on Microwave Theory and Techniques 48.2 (Feb. 2000 [T-MTT] (Mini-Special Issue on Research Reported at the 1999 Radio Frequency Integrated Circuits (RFIC) Symposium)): 187-193.*

A technique for generating accurate antiphase signals is presented in this paper. Monolithic oscillators at 20 and 40 GHz are realized using this technique. These oscillators have dual outputs that are mutually locked in antiphase. The inherent amplitude and phase balances between the output signals are verified. This is achieved by direct measurement using injection-locking polar diagrams, as well as low-frequency measurements of the down-converted oscillator outputs. The operation of the balanced oscillator as a multidevice power-combining oscillator is also investigated. Improvements of phase noise reduction and frequency stabilization are demonstrated at the combined oscillator output. This new oscillator topology shows significant potential in balanced circuits like mixers, multipliers, and modulators where circuit performance relies on the precise generation of the balanced signals.

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