Abstracts

Millimeter-Wave Receivers with Subharmonic Pump

T.F. McMaster, M.V. Schneider and W.W. Snell, Jr.. "Millimeter-Wave Receivers with Subharmonic Pump." 1976 Transactions on Microwave Theory and Techniques 24.12 (Dec. 1976 [T-MTT] (1976 Symposium Issue)): 948-952.

Hybrid integrated downconverters which are pumped at half the frequency needed in a conventional downconverter have shown a conversion loss of 3 dB at 50 GHz and 6 dB at 100 GHz with a corresponding single-sideband (SSB) receiver noise figure of 7 dB at 50 GHz and 11 dB at 100 GHz. The circuits are linearly scaled from an optimized 5-GHz model. Each downconverter consists of a stripline conductor pattern, a novel transition from waveguide to stripline, and a Schottky-barrier diode pair. The circuits can be tuned over a useful RF bandwidth of 20 GHz, and they can be readily scaled to other frequency bands.

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