# Abstracts

## Planar FET Oscillators Using Periodic Microstrip Patch Antennas

*J. Birkeland and T. Itoh. "Planar FET Oscillators Using Periodic Microstrip Patch Antennas." 1989 Transactions on Microwave Theory and Techniques 37.8 (Aug. 1989 [T-MTT]): 1232-1236.*

Planar oscillators in which periodic microstrip antennas are integrated with FET negative resistance elements to form an integrated quasi-optical source are described. The antennas considered here are periodic microstrip patch arrays operated in the leaky-wave stopband. Because of the high VSWR in this case, this type of antenna may be used as both a resonant and a radiating element. Such circuits are suitable for use in millimeter-wave systems as well as at microwave frequencies. A design procedure is given and the performance of X-band prototype circuits is reported. Prototype circuits showed 9 dB isotropic conversion gain and 40 MHz tuning range at 9.5 GHz.

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