# Abstracts

## A Microstrip Low-Noise X-Band Voltage-Controlled Oscillator (Dec. 1979 [T-MTT])

*E.C. Niehenke and R.D. Hess. "A Microstrip Low-Noise X-Band Voltage-Controlled Oscillator (Dec. 1979 [T-MTT])." 1979 Transactions on Microwave Theory and Techniques 27.12 (Dec. 1979 [T-MTT] (1979 Symposium Issue)): 1075-1079.*

Design and perfomance of an X-band microstrip bipolar varactor-tuned oscillator integrated with an FET amplifier is presented. Wide temperature operation (-55 to 71°C), constant high power (0.5 W), low post-tuning drift (0.75 MHz) for 8-percent tuning range, and exceptionally low SSB phase noise (-125 dBc/Hz with GaAs hyperabrupt or -132 dBc/Hz with silicon abrupt tuning diode at 1-MHz modulation frequency) is reported. Extremely linear frequency-voltage characteristic is achieved with the GaAs hyperabrupt tuning diode for this oscillator without the need for complex Iinearizing circuitry. Circuit synthesis techniques and noise estimation criteria are presented which correlate with the experimental results.

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