Abstracts

A 2 GHz Surface Transverse Wave Oscillator with Low Phase Noise (Dec. 1988 [T-MTT])

L. Eichinger, B. Fleischmann, P. Russer and R. Weigel. "A 2 GHz Surface Transverse Wave Oscillator with Low Phase Noise (Dec. 1988 [T-MTT])." 1988 Transactions on Microwave Theory and Techniques 36.12 (Dec. 1988 [T-MTT] (1988 Symposium Issue)): 1677-1684.

A hybrid oscillator at 1.9805 GHz has been developed rising acoustic surface transverse wave (STW) delay lines operating at the third harmonic as the frequency controlling element. The STW delay lines were fabricated on 37.5° rotated Y-cut quartz substrates with a photolithographic technique. A very thin metallization (25 nm) was used to obtain low insertion loss. A split isolated electrode design was used for the transducers. The Q value and the untuned insertion loss of the STW filter were 3400 and 21 dB, respectively. The phase noise and temperature stability of the oscillator were characterized. At a power output of 6.5 dBm a single-sideband phase noise to carrier ratio of -100 dBc/Hz at 1 kHz was attained.

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