Abstracts

Influence of the oscillator equivalent circuit on the stable modes of parallel-coupled oscillators

Heng-Chia Chang, E.S. Shapiro and R.A. York. "Influence of the oscillator equivalent circuit on the stable modes of parallel-coupled oscillators." 1997 Transactions on Microwave Theory and Techniques 45.8 (Aug. 1997, Part I [T-MTT]): 1232-1239.

This paper addresses a deficiency in the authors' previous work on coupled-oscillator theory, involving the nature of the resonance in the oscillator equivalent circuit and its influence on the stable modes of the, coupled-oscillator system. The authors show that series and parallel oscillators with identical free-running characteristics nevertheless behave differently when coupled by the same coupling network. The analysis focuses on parallel-coupling networks, which are most practical at microwave frequencies, and specifically on nearest-neighbor coupling topologies. The theory is verified using four small active-patch arrays operating at 10 GHz.

❑ Return to main document.