

**Ali M.K., Subramanian V., Tao Zhang, and Boeck G.,  
“Performance Comparison of Differential K-Band VCOs in  
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**Abstract:** This paper compares a conventional NMOS VCO with a transformer feedback (TF) VCO in 130 nm CMOS technology. A design procedure to achieve the optimum performance available is presented. Device sizes and biasing current are chosen for lowest possible phase noise. The conventional NMOS VCO achieves -103 dBc/Hz phase noise at 1 MHz offset with 2 GHz tuning range and 18 mW power consumption and the TFVCO shows -99 dBc/Hz phase noise at 1 MHz with 3.3 GHz tuning range and 5 mW power consumption.