Abstracts

Low phase noise, fully integrated monolithic VCO in X band based on HBT technology

Z. Ouarch, F. Arlot, M. Borgarino, M. Prigent, L. Bary and M. Camiade. "Low phase noise, fully integrated monolithic VCO in X band based on HBT technology." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1415-1418 vol.3.

This paper presents a very low phase noise wide band fully integrated VCO in X band. It is based on UMS HBT technology (HB20P process). This circuit has been realized in the frame of ARGOS project in order to carry out a low phase noise frequency synthesizer. HB20P transistor and varactor nonlinear models have been extracted from pulsed measurements. Furthermore, HBT low frequency noise measurements have been performed to evaluate noise sources and then to optimize the operating point in the design. According to these characterizations, we have realized a fully MMIC VCO providing good phase noise performances (-90 dBc/Hz @ 100 KHz), in a wide frequency band (15%) and in a wide temperature range (-40/spl deg/C<T<+65/spl deg/C).

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