Abstracts

Active antennas incorporating tunnel diodes-large signal model approach

Kai Liu, S.M. El-Ghazaly, M.R. Deshpande, V. Nair, N. El-Zein and H. Goronkin. "Active antennas incorporating tunnel diodes-large signal model approach." 2001 Microwave and Wireless Components Letters 11.8 (Aug. 2001 [MWCL]): 331-333.

In this letter, a comprehensive dc and RF model of heterostructure interband tunnel diodes (HITDs) is extracted. Active antennas incorporating tunnel diodes are analyzed in the time domain using this tunnel diode model. The simulated and measured results are in good agreement in terms of oscillation frequencies of the active antennas. Phase noise of -114.67 dBc/Hz @1.0 MHz offset is achieved for injection-locked active antennas. The simulated injection locking range of a Ka band active antenna array is investigated.

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