Abstracts

A Subharmonically Pumped Resistive Dual-HEMT-Mixer

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A new subharmonically pumped High Electron Mobility Transistor (HEMT)-based resistive mixer is described. The mixer is based on a paralleled HEMT-configuration where the LO is applied to the gates with the same amplitude but with opposite phase. A mixer prototype was constructed at X-band. A conversion loss of 6.5 dB was measured at an LO-power level of 12 dB/sub m/. A high LO-IF and LO-RF isolation is obtained intrinsically due to LO-cancellation. HEMT-devices were fabricated and characterized, and a nonlinear device model was developed and used in Harmonic Balance simulations.

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