Abstracts

A planar circuit design for high order sub-harmonic mixers

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A planar circuit design technique is presented that results in relatively low conversion loss for sub-harmonic mixers using high-order LO harmonic frequencies. The design method results in conversion losses from 15 to 20 dB for LO frequencies ranging from the 3/sup rd/ to the 9/sup th/ sub-harmonic for signal frequencies up to W-Band. Measured data agrees closely to the simulated results for a 25 GHz, 3/sup rd/ and 5/sup th/ sub-harmonic prototype. The resulting conversion loss of these designs is not sensitive to the harmonic number used and provides a simple, commercially viable, planar approach to high frequency mixer design.

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