Abstracts

Determination of Schottky Diode Sampling Mixer Frequency Response from Diode Conductance Waveforms (Short Papers)

Conversion loss variations at microwave frequencies for Schottky diode harmonic sampling mixers are predicted from a time and frequency domain analysis of diode conductance waveforms. A circuit model for the mixer is used to find a nonlinear integral-deferential equation governing the sampling mixer's time domain behavior. An iterative solution is used to determine the diode conductance waveform, whose fourier transform is the frequency response of the sampler. Experimental verification is given for three different values of sampling capacitors and two different sampling chamber delays over a 2 to 40 GHz range.

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