Abstracts

A simplified method to predict the conversion loss of FET resistive mixers

S. Peng. "A simplified method to predict the conversion loss of FET resistive mixers." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 857-860.

In FET resistive mixers, FET behaves like a switch when LO signal excites the gate terminal. By modeling the on-state conductance of the FET as a linear function of the gate voltage, we are able to analytically evaluate the conversion loss of the mixers by a simple Fourier transform. We have applied this method to calculate the conversion loss of an NE71000 MESFET and an NE32400 HFET resistive mixers at X-band, and compared with measured data. Excellent agreement was obtained in each case. The advantage of this method is apparent: good predictions of the conversion loss of FET resistive mixers can be quickly obtained without using sophisticated nonlinear device model and Harmonic-Balance circuit simulator.

❑ Return to main document.