Abstract

This paper exhibits an examination, configuration, design to measure nonlinear characteristics of low noise amplifier (LNA) furthermore investigation, assess those estimations in the AWR microwave office Tool. A large portion of the critical aspects of LNA will be in linear measurements and which is composed, designed and simulated for the ultra LNA from 3GHz to 10GHz. In this proposed work the methodology has made to address nonlinear and linear measurements to the restricted band LNA which be working in 820-960 MHz ISM band. The work provides the required information about LNA design by using two different advance measurement techniques. First techniques are by using two tone harmonic balance source input and second one is uses just by two port 50Ω lossless line. A simulation setup is made to measure the characteristics of LNA by using spectrum rectangular display type with power harmonic components. In this paper, three circuits schematic of the designed LNA are discussed with corresponding measurements. Finally, author designed ultra-wideband LNA from the bandwidth 3GHz to 10GHz and elaborates how nonlinear measurements changed the way of LNA design to validate and construction at higher frequencies.
The Linear, Non-linear Measurements, Analysis and Evaluation for the Design of Ultra-Wideband Low Noise Amplifier

References


Index Terms

Computer Science

Communications
Keywords

Nonlinear measurements, microwave circuits, two-tone measurements, harmonic balance, Scattering parameters and Low noise amplifier (LNA).