Abstracts

Low noise, high linearity, wide bandwidth amplifier using a 0.35 /spl mu/m SiGe BiCMOS for WLAN applications

J. Sadowy, I. Telliez, J. Graffeuil, E. Tournier, L. Escotte and R. Plana. "Low noise, high linearity, wide bandwidth amplifier using a 0.35 /spl mu/m SiGe BiCMOS for WLAN applications." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 217-220.

In this paper, we present the design of an integrated low noise amplifier (LNA) for WLAN applications in the 6 GHz range using a low complexity SiGe BiCMOS technology. The SiGe HBTs used In the design feature a typical cut-off frequency "Ft" of 45 GHz and a typical maximum oscillation frequency "Fmax" of 60 GHz The LNA exhibits a 17 dB power gain with a 1.4 GHz bandwidth and a noise figure lower than 2.5 dB. The 1 dB compression point Is -18 dBm and the third order intercept point referred to the input is -7 dBm. We have furthermore observed a good accuracy between simulations and measurements. Finally, we have defined a new figure of merit involving the noise measure and the DC power consumption that shows that our design features a performance at the state of the art.

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