Design of Low Noise and High Isolation Down Converter for 802.11a/g WLAN Applications

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ABSTRACT

It is very important to notice the performances of the Isolation, Noise Figure, and Conversion Gain when designing mixer. Therefore, in order to match the standard. We combine the concept of designing LNA and use the idea of Power Adder to look forward to the design of mixer with lower Noise Figure and good Isolation and Transducer Gain. From the concept above, my design of circuit structure is divided into three parts. First part is the frame of CCSF（Cascode Inductive Series Feedback）. Second is Power Adder and the third is mixer stage. The purpose of the paper is to use the small size of RFIC, and the advantages of CMOS -- the steady making process, the low cost and high integration to design and implementation of a low-noise and high-isolation down converter for WLAN 5.2 GHz and 2.4 GHz. We chose the making process of TSMC 0.25 um to make the Down Converter of 2.4 GHz and chose the making process of TSMC 0.18 um to make the Down Converter of 5.2 GHz and they are all finish measurement.

Keywords : down converter ; low-noise ; high-isolation

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