Abstract

The Low Noise Amplifier (LNA) is very much important in achieving good reception sensitivity in the wideband transceiver of Ultra Wide Band (UWB) architecture. In this paper, the LNA is designed for Multi Band-Orthogonal Frequency Division Multiplexing (MB-OFDM) receiver, which is used to transmit the information on 14 different sub bands of UWB with minimum of 528 MHz frequency in each band. The LNA comprises of three stages namely input stage, core stage and output stage. The input stage is for better Input matching and output stage contributes better Output matching by acting as a buffer. The core stage is responsible for high gain of the LNA. Different sub bands are achieved with the help of inductors at the input and the output stage. The spiral inductor at the input stage of the LNA is replaced with a suitable active inductor. The gain and Noise Figure of all the three stages depends on the Active
Reconfigurable LNA for MB-OFDM Receiver using Active Inductor

The gain of the Active Inductor (AI) based LNA varies from 25 dB to 22 dB throughout the 14 bands of UWB. The noise figure varies from 5 dB to 6.3 dB. The input impedance lies between -7 dB to -9 dB and output impedance lies from -5 dB to -14 dB. All simulations are carried out using Advanced Design Software (ADS) 2013.

References

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Index Terms

Computer Science  

Index Terms  

Signal Processing

Keywords

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