

Design of a Broadband CMOS Amplifier By removing noise for UWB receivers

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The purpose of this thesis is to design an LNA so as to reduce noise and power consumption as much as possible with suitable body width and be suitable for frequency applications between 3 - 6/10 GHz. The design is done with CMOS technology nm130 and ADS software. We try to design a low noise amplifier so that the amplitude of the amplitude noise is small and less than 3.5 dB. Next, we propose different techniques and methods to improve its performance. The first idea is to use a capacitor on the output side of the circuit. We recommend the use of resistors etc. in this study. Finally, we design a low noise amplifier by adding an RC connector at the output side and adding a few elements at the input side to achieve the broadband input matching purpose. We bring the noise number to a range of 1.9 dB in the frequency range. With this technique, in the frequency range of 0.5 - 16 GHz, the minimum noise number was reduced to 1.9 dB and the maximum gain was 17 dB.

Keywords : Keywords: Low Noise Amplifier, Noise Reduction Technique

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