Title:
Design and Simulation of a Low-Noise Amplifier (LNA) with low power consumption and high gain in 2.4GHz frequency for wireless systems

Abstract:
The Low-Noise-Amplifiers (LNA) because of their special importance in the structure of the radio receivers of great interest are for research activities. The amplifier must have high gain, low noise figure and the bandwidth required to have appropriate linearity. The purpose of this thesis is to design a narrow-band low noise amplifier with low noise figure, high gain and low power consumption. The use of narrow-band structure allows a circuit to oscillation frequency range and output have fallen. For this purpose, a common source structure with source inductor in a circuit central nucleus is used to reduce the noise figure of the amplifier. Cascode circuit using common source structure due to increased output impedance, gain and stability in the circuit is triggered. Added to this circuit matching network improves the quality of the matching circuit. In add the rest of the circuit in addition to the reduction power considerations taken into consideration, we have been able to achieve impedance matching suitable amplifier design.

Keywords:
low noise, impedance matching, noise, gain, stability, common source amplifier with inductor at source