

**DESIGN A SPIRAL INDUCTOR ON SILICON FOR RADIO
FREQUENCY INTEGRATED CIRCUIT (RF IC)**

**Project report presented in partial fulfillment for award of the
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ABSTRACT

This project described the design, simulation and analysis of several spiral inductors on Silicon substrate in wireless Radio Frequency Integrated Circuit (RF IC) system. The spiral inductor designed to be operated at frequency 2.4 GHz. Inductor is designed in the consideration of having maximum quality factor Q_{\max} and the inductance value L . The Silicon Integrated Circuit (Si IC) spiral inductor is analyzed by simulation using electromagnetic simulator *Sonnet*. This analysis is applied using octagonal and rectangular inductor structure as comparative measurement with consideration of variation parameters such as number of turns N , spacing S , width W , and oxide thickness H . Result of this simulation show that the spiral inductor operates well at the operating frequency.

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