

High Efficiency Class-F Power Amplifier Design

Authors : Abdalla Mohamed Eblabla

Abstract : Due to the high increase and demand for a wide assortment of applications that require low-cost, high-efficiency, and compact systems, RF power amplifiers are considered the most critical design blocks and power consuming components in wireless communication, TV transmission, radar, and RF heating. Therefore, much research has been carried out in order to improve the performance of power amplifiers. Classes-A, B, C, D, E, and F are the main techniques for realizing power amplifiers. An implementation of high efficiency class-F power amplifier with Gallium Nitride (GaN) High Electron Mobility Transistor (HEMT) was realized in this paper. The simulation and optimization of the class-F power amplifier circuit model was undertaken using Agilent's Advanced Design system (ADS). The circuit was designed using lumped elements.

Keywords : Power Amplifier (PA), gallium nitride (GaN), Agilent's Advanced Design System (ADS), lumped elements

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