Abstract

Due to the high increase in 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. This paper presents the design and analysis of Class F power amplifier. The Class F amplifier is used in a base station for mobile system because of its high efficiency. An implementation of high efficiency class-F power amplifier with Gallium Arsenide (GaAs) Field Effect Transistor (FET) was realized in this paper. The analysis and design of Class F power amplifier were studied at different operating frequency. It is found that the amplifier can operate at GSM and CDMA base station at input power level more than 15dBm. The simulation of the class-F power amplifier circuit model was undertaken using Agilent’s Advanced Design system (ADS).

References
High Efficiency Class F Power Amplifier Design for GSM System


10. Andrei Grebennikov, Bell Labs, and Alcatel-Lucent, 2011 Load Network Design Technique for Class F and Inverse Class F Pas. High Frequency Electronics.

Index Terms

Computer Science

Communications

Keywords

Power Amplifier (PAs), Class F power amplifier , Gallium Arsenide (GaAs FET).