



## Highly Linear and Efficient RF Power Amplifiers and Front Ends For Wireless Transmitters

By Ahmed Farouk Aref

Verlagsgruppe Mainz Dez 2015, 2015. Taschenbuch. Book Condition: Neu. 211x149x14 mm. Neuware - Mobile data consumption has been increasing exponentially since the advent of mobile internet. Due to the exponentially growing demand for data, massive strain is placed on different active actors in the mobile wireless communication industry. Data throughput, wireless coverage, operability and energy expenditure are the main challenges which face different players in the wireless communications industry. The goal of this research work is to address these different kinds of challenges for wireless transmitters in base stations and in mobile communication devices. Focusing first on reconfigurability and power efficiency of power amplifiers in mobile handheld devices, the research goal was to explore hardware configurable PAs which can be fully integrated in bulk CMOS technology. The second phase of this research work was to focus on achieving linearity together with reaching high levels of output power using linear CMOS PAs. A new concept together with the implementation of a highly linear new Class of PAs, termed as Class-0, has resulted out of this research work. This new type of PA is capable of reaching the required levels of output power needed for cellular applications with nanoscale CMOS devices while...



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