An Efficient RF Energy Harvesting System

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Abstract: This paper proposes a new radio frequency (RF) energy harvesting system that operates over the Wi-Fi 802.11 b/g band at low input power levels. The system presented herein achieves good power conversion efficiencies (PCEs) over a power range that extends from (-20 dBm) to (3 dBm). A directive slot antenna is incorporated to drive the rectification process of the designed rectenna. The rectenna system is measured and tested, along with a power management circuitry, for design validation purposes. A good agreement between simulated and measured results is attained.