

Design of Dual-Band Rectifier Using Microstrip Spurline Notch Filter

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Abstract

This paper proposes and demonstrates a novel dual-band rectifier at 2.45 GHz and 5.8 GHz. The proposed rectifier employs a microstrip spurline notch filter to realize dual-band high RF-DC conversion efficiency. The control of reflected signals from the output filter to maximize the voltage swing at the diode, and use of the spurline notch filter provide high-level conversion efficiencies at both operating frequency bands. The fabricated proposed dual-band rectifier achieves the RF-DC conversion efficiencies of 55.9 % and 55.4 % at 2.15 GHz and 5.84 GHz, respectively. These results are top-level performances of the dual-band rectifiers.

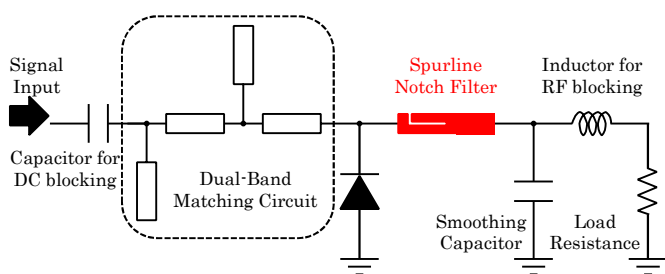


Fig. 1. Schematic of dual-band rectifier.

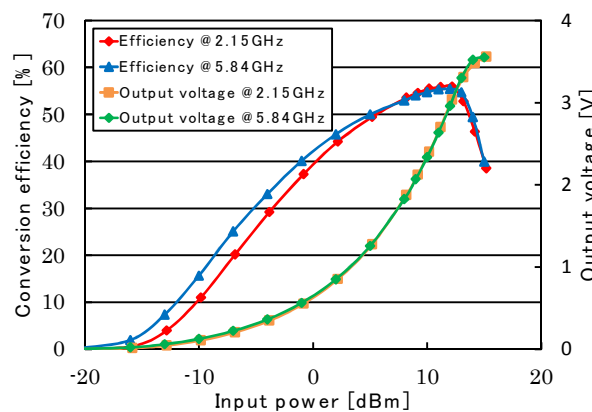


Fig. 2. RF-DC conversion efficiency comparison of reported dual-band rectifiers.

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