Abstracts

A high conversion efficiency 5.8 GHz rectenna

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A high efficiency rectenna element has been designed and tested at 5.8 GHz for applications involving microwave power transmission. The dipole antenna and filtering circuitry are printed on a thin duroid substrate. A silicon Schottky-barrier mixer diode with a low breakdown voltage is used as the rectifying device; The rectenna element is tested inside a waveguide simulator and achieves an RF to DC conversion efficiency of 82% at an input power level of 50 mW. The antenna and circuit design is based on a full-wave electromagnetic simulator.

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