

Abstracts

Optimization of the Efficiency and Other Properties of the Rectenna Element

W.C. Brown. "Optimization of the Efficiency and Other Properties of the Rectenna Element."
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The rectenna which captures and rectifies the microwave power at the receiving end of a free space microwave power transmission system is comprised of many elements consisting of halfwave dipoles with microwave filter and rectification circuits attached. This element has been independently optimized for efficiency and analyzed for losses. The paper describes the device, the special test equipment used, the results of the mathematical modelling and computer simulation, special low loss Schottky barrier diodes that have been constructed to improve the efficiency, and life tests that have been made on these devices. An efficiency, defined as the ratio of DC power output to incident microwave power, of over 90% has been achieved.

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