Abstracts

High Efficiency C-Band 1000 Element Rectenna Array for Microwave Powered Applications

S.S. Bharj, R. Camisa, S. Grober, F. Wozniak and E. Pendleton. "High Efficiency C-Band 1000 Element Rectenna Array for Microwave Powered Applications." 1992 MTT-S International Microwave Symposium Digest 92.1 (1992 Vol. I [MWSYM]): 301-303.

A highly efficient rectenna array, at 5.87 GHz, comprising of 1000 dipole elements has been designed, developed, and demonstrated for the first time for microwave powered applications. The rectenna dipole elements exhibit an rf to dc efficiency exceeding 80% with a uniform illuminated aperture. The rectification element consists of a custom packaged Silicon Schottky diode quad bridge with a high reverse breakdown voltage. The novel mechanical structure of the low cost rectenna consist of a dipole array substrate and a busbar substrate suitably assembled to ensure diode cooling through conduction and convection.

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