Abstracts

5.8 GHz circular polarized rectifying antenna for microwave power transmission

B. Strassner and Kai Chang. "5.8 GHz circular polarized rectifying antenna for microwave power transmission." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1859-1862 vol.3.

This paper reports a new 5.8 GHz circular polarized (CP) high gain, high-efficiency rectifying antenna (rectenna). The CP rectenna can be rotated and still maintain a constant output voltage. A high-gain dual rhombic loop antenna and a reflecting plane are used to achieve a circular polarized antenna gain of 10.5 dB, a 2:1 VSWR bandwidth of 10 %, and average beamwidths of 43/spl deg/ and 59/spl deg/ In the E- and H-planes, respectively. The rectenna circuit has a coplanar stripline (CPS) band reject filter (BRF) which suppresses the re-radiated harmonics by 20 dB. A highly efficient Schottky diode is used for RF to DC conversion with an efficiency of approximately 80%.

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