Abstracts

A circularly polarized rectifying antenna array for wireless microwave power transmission with over 78% efficiency

B. Strassner and Kai Chang. "A circularly polarized rectifying antenna array for wireless microwave power transmission with over 78% efficiency." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1535-1538 vol.3.

This paper reports a new circularly polarized (CP) high gain, high-efficiency rectifying antenna (rectenna) array designed in a coplanar stripline circuit. The array can maintain a constant DC output voltage regardless of its broadside orientation. Each antenna has a CP antenna gain of 11 dB and a better than 1 dB axial ratio fractional bandwidth of 4.7%. Coplanar stripline (CPS) band-reject filters (BRF) are used to suppress the re-radiated harmonics by more than 19 dB. At 5.61 GHz, using an array loading of 150 /spl Omega/, a 3/spl times/3 rectenna array achieves an RF-to-DC conversion efficiency of 78% and an axial ratio of 0.25 dB.

❑ Return to main document.