Abstracts

Circularly polarized millimeter-wave rectenna on silicon substrate

R.H. Rasshofer, M.O. Thieme and E.M. Biebl. "Circularly polarized millimeter-wave rectenna on silicon substrate." 1998 Transactions on Microwave Theory and Techniques 46.5 (May 1998, Part II [T-MTT] (Special Issue on Microwave Circuits on Silicon Substrates)): 715-718.

A circularly polarized (CP) silicon-integrated W-band rectenna (r_e_c_t_ifying ante_n_n_a_) for use in six-port polarimetric radar systems was designed, numerically optimized, and fabricated. A rigorous numerical optimization was performed by using the supergrid method (SGM). The rectenna applies a novel low-loss purely planar dual-patch antenna (DPA) layout, which allows the receiver to be manufactured using monolithic integration. The measurement results for the receiver demonstrate an excellent cross-polarization discrimination (XPD) >14 dB @ 76 GHz over a wide range of the scan angle (12 dB @ /spl plusmn/20/spl deg/).

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