Abstracts

Electronic Modulated Beam-Steerable Silicon Waveguide Array Antenna

R.E. Horn, H. Jacobs, E. Freibergs and K.L. Klohn. "Electronic Modulated Beam-Steerable Silicon Waveguide Array Antenna." 1980 Transactions on Microwave Theory and Techniques 28.6 (Jun. 1980 [T-MTT]): 647-653.

The design and experimental findings for a low-cost easily fabricated millimeter-wave line scanner is described. This antenna consists of a 1-mm x 1-mm silicon dielectric rod with a metal grating (periodic structure) on the upper surface and p-i-n diodes mounted on the sidewall. A narrow 8° beam is radiated from the grated (perturbed) surface at an angle dependent on the guide and perturbation spacing. The beam angle is switched over a 10° angle by application of a dc forward current through the p-i-n diode modulators.

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