JOURNAL OF APPLIED PHYSICS VOLUME 88, NUMBER 10 15 NOVEMBER 2000

Interaction between a waveguide-fed narrow slot and a nearby conducting strip in millimeter-wave scanning microscopy

Amit Hochman, Peter Paneah, and Yehuda Leviatan[a)]
Department of Electrical Engineering, Technion–Israel Institute of Technology, Haifa 32000, Israel

(Received 14 February 2000; accepted for publication 21 August 2000)

Millimeter-wave microscopy is investigated with the aid of a simplified model. The model consists of a parallel plate waveguide opening into a ground plane and radiating in the presence of a perfectly conducting strip. The method of moments is used together with a quasi-static approximation to solve for the reflection coefficient. Numerical results included indicate that high resolutions are feasible with this apparatus.
[S0021-8979(00)08822-8]