Abstracts

Millimeter-Wave Double-Dipole Antennas for High-Gain Integrated Reflector Illumination

D.F. Filipovic, W.Y. Ali-Ahmad and G.M. Rebeiz. "Millimeter-Wave Double-Dipole Antennas for High-Gain Integrated Reflector Illumination." 1992 Transactions on Microwave Theory and Techniques 40.5 (May 1992 [T-MTT]): 962-967.

A double-dipole antenna backed by a ground plane has been fabricated for submillimeter wavelengths. The double-dipole antenna is integrated on a thin dielectric membrane with a planar detector at its center. Measured feed patterns at 246 GHz agree well with theory and demonstrate a rotationally symmetric pattern with high coupling efficiency to Gaussian beams. The input impedance is around 50 omega, and will match well to a Schottky diode or SIS detector. The double-dipole antenna served as the feed for a small machined parabolic reflector. The integrated reflector had a measured gain of 37 dB at 119 µm. This makes the double-dipole antenna ideally suited as a feed for high resolution tracking or for long focal length casegrain antenna systems.

❑ Return to main document.