Abstracts

Spectral-Domain Analysis for Dielectric Antenna Loaded with Metallic Strips

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A spectral-domain analysis is presented for a millimeter-wave antenna that consists of a dielectric rod loaded periodically with metallic strips. Numerical results are given for the leakage constant and the radiation angle over a large range of frequency. In particular, the effect of finite antenna width is examined in detail, with the polarization coupling between TE and TM modes properly taken into account in the analysis. Experiments are carried out in the X-band frequencies, and the results obtained verify the theory very well.

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