Abstracts

A highly directive dipole antenna embedded in a Fabry-Perot type cavity

T. Akalin, J. Danglot, O. Vanbesien and D. Lippens. "A highly directive dipole antenna embedded in a Fabry-Perot type cavity." 2002 Microwave and Wireless Components Letters 12.2 (Feb. 2002 [MWCL]): 48-50.

We investigate the origin of the directivity of a dipole antenna embedded in a dielectric slab Fabry-Perot cavity. It is shown that the focusing effect is due to the angular selection rules in the Bragg-type mirror and is directly correlated to the frequency selectivity of the cavity. For a 6 GHz resonant device, having a quality factor of 100, the aperture of the beam pattern (E-H plane) is close to 12/spl deg/ in agreement with the arguments based on frequency and angular selectivities. Hence, this kind of cavity could be used in free-space based communication links.

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