Abstracts

Bandwidth Enhancement in Dielectric-Lined Circular Waveguides (Short Papers)

G.N. Tsandoulas. "Bandwidth Enhancement in Dielectric-Lined Circular Waveguides (Short Papers)." 1973 Transactions on Microwave Theory and Techniques 21.10 (Oct. 1973 [T-MTT]): 651-654.

The increase in TE/sub 11/-TM/sub 01/ mode bandwidth obtained by inhomogeneously loading (dielectric lining) a circular waveguide is systematically documented. Maximum bandwidth is about 31.83 percent of center frequency (up from about 26.54 percent for fully filled or empty circular waveguides). This makes circular waveguides competitive with square waveguides (bandwidth/spl aprox/ 34.3 percent) as radiators in wide-band dual-polarization arrays. Certain interesting symmetries involving the TE/sub 21/-TM/sub 01/ modal inversion are also examined.

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