Abstracts

Modal Attenuation in Multilayered Coated Waveguides

R.-C. Chou and S.-W. Lee. "Modal Attenuation in Multilayered Coated Waveguides." 1988 Transactions on Microwave Theory and Techniques 36.7 (Jul. 1988 [T-MTT]): 1167-1176.

Propagation and attenuation constants of low-order normal modes in a circular waveguide lined with lossy coating layers are calculated using a generalized dispersion equation. It is found that the use of multilayered coating can significantly enhance modal attenuations over a broader frequency range compared to that for a single-layer coated structure. For a cylinder with radius a = 2 lambda, the attenuation constants for the dominant modes are shown to increase by 20 dB per a by adding a lossless padding layer to a lossy magnetic coating. Application of this result in radar cross section (RCS) reduction is also discussed.

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