Abstracts

Problems in Strip Transmission Lines

S.B. Cohn. "Problems in Strip Transmission Lines." 1955 Transactions on Microwave Theory and Techniques 3.2 (Mar. 1955 [T-MTT]): 119-126.

A review is given of characteristic-impedance formulas for shielded-strip transmission lines. From these formulas a set of approximate relationships for the attenuation and Q of a dielectric-filled shielded-strip transmission line is derived. The method makes the standard assumption that the current distribution is that of a lossless line and the surface resistivity that of an infinite-plane condutor. Although this method applies accurately to most other types of lines, in this case an error of the order of 10% is believed to occur due to the failure of the assumptions at the corners of the strip. However, the error is in a direction that makes the computed values conservative, and the accuracy should be sufficient for most practical purposes. The derivation of a correction term is now being attempted. In addition to the discussion of attenuation attention is given in this paper to the design considerations involved in a shielded-strip-line impedance meter, and to some preliminary data obtained with this device. Also the future topics for investigation under this research and development program are mentioned.

❑ Return to main document.