Abstracts

Leakage of the Strip Line Dominant Mode Produced by a Small Air Gap

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Stripline may have an inhomogeueous dielectric medium, due to inadvertent air gaps. For such inhomogeneous stripline, two dominant modes are generally present, a proper (bound) mode and an improper complex (leaky) mode; the properties of both dominant modes have been obtained by using a full-wave spectral-domain approach. Of these two dominant modes, we find that it is the leaky mode that is the continuation of the conventional stripline mode when a very small air gap is introduced. This presentation discusses the nature of this leaky dominant mode, and shows that the leaky mode may be responsible for spurious transmission-line effects in stripline. In addition, under certain conditions interference effects can occur between the two dominant modes. These conclusions are confirmed by measurements.

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