Abstracts

Full wave analysis of coplanar phase shifter printed on high purity ferroelectric material

F. De Flaviis. "Full wave analysis of coplanar phase shifter printed on high purity ferroelectric material." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1367-1370.

In this paper a detailed analysis of coplanar phase shifters which use ferroelectric material (FEM) as active tuning element is performed, and results are compared with measured data. The phase-shift capability of the FEM results from the fact that the dielectric constant of such a material can be changed under the effect of an electric static bias field. Because of the nonlinear nature of these materials and the tensor property of their dielectric constant, a static analysis is performed to obtain the spatial dependence of the permittivity using an iterative numerical technique. Once the spatial dielectric tensor profile of the material for the specific structure is obtained, a full wave analysis based on a time domain technique is conducted to obtain the return loss and insertion loss of the phase shifter.

❑ Return to main document.