Abstracts

Centimeter-Wave Microstrip Phase Shifter on a Ferrite-Dielectric Substrate

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The propagation characteristics and fields of a microstrip transmission line on a composite ferrite-dielectric substrate are studied with a focus on its phase-shifting behavior. Two different methods are used for theoretical analysis, namely the least-squares boundary residual (LSBR), which offers high precision, and a variational method in the spectral domain, which requires a low computing time. Quasi-TEM propagation is assumed in both cases. The results obtained are compared with the experimental data, and good agreement is observed. Besides its easy design, this phase shifter presents the advantage of having a good peak power handling capacity as well as a low production cost because of the ease with which it can be integrated in planar systems.

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