Abstracts

Nonlinear intermodulation coupling in ferrite circulator junctions

We have solved the nonlinear intermodulation coupling problem of a planar ferrite junction containing 3N ports. The coupling is represented as driving currents within the junction, and the induced fields can be solved by using the radiation and the boundary-value Green's functions. Maximum coupling of intermodulations occur if the excitation frequencies at the ports are close to the circulation frequency of the circulator. Also, we find that the static demagnetizing field can effectively increase the intermodulation output power.

❑