Abstracts

Modeling of conductor-loaded resonators and filters in rectangular enclosures

Full-wave modeling of conductor-loaded resonators in rectangular enclosures and the associated coupling structure is presented. The modeling yields generalized scattering matrices of the cylindrical conductor-loaded resonators in rectangular waveguides. By applying short and open conditions and cascading procedure, resonant frequencies, field distributions of the resonator, and coupling coefficients between two cavities through an iris are obtained. The computed results are compared with the measured data and both are in good agreement. A four- and an eight-pole dual-mode elliptic-function filter were designed, constructed, and tested. Measured frequency responses of the filters verify the theory.