Abstracts

Broad-Band Impedance Matching a Shunt Slot Radiator Using an Improved Computer-Aided Technique (Short Papers)

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A broad-band computer-aided impedance-matching technique using a comparison reflectometer has been established. The technique is capable of resolving points in a waveguide which generate reflected energy. The comparison reflectometer determines the mean amplitude of the reflection coefficient as a function of distance along the guide and the complex-reflection coefficient of a specific discontinuity in the guide as a function of frequency. A computer program has been developed which is capable of impedance matching the characteristics of each disturbance independent of other reflections in the guide. A shunt slot radiator was fabricated and its complex-reflection coefficient measured with a comparison reflectometer. Application of the computer-sided matching technique resulted in a VSWR of less than 1.16 to 1.0 for the slot radiator over the frequency band from 8.5 to 10.5 GHz.

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