

Abstracts

A Microwave Circuit Electric Field Imager

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We report on the theory of operation and the experimental results obtained from an electric field imaging system that employs the method of modulated scattering. The system is low cost and is capable of mapping the normal and tangential electric field magnitude and electrical phase delay at each position within 5 km above a microwave circuit in the frequency range of 0.5 GHz to 18 GHz. The electric field probes are fabricated on a very thin quartz substrate. The measured images of the normal and tangential electric fields over microstrip and coplanar waveguide transmission lines are presented and agree well with theory.

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