Abstracts

A New Microstrip Radiator For Medical Applications

I.J. Bahl, S.S. Stuchly and M.A. Stuchly. "A New Microstrip Radiator For Medical Applications." 1980 Transactions on Microwave Theory and Techniques 28.12 (Dec. 1980 [T-MTT] (1980 Symposium Issue)): 1464-1469.

Ring-type microstrip antennas appear to offer important advantages in medical therapy when used for local tissue heating. In designing these radiators, the properties of a microstrip covered with layers of lossy dielectric representing various tissue layers have to be taken into account. This paper provides basic information on design of ring-type radiators for tissue heating and the experimental results for a unit designed to operate in the TM modes at 2.45 GHz. The radiator is well matched when spaced 1.3-3 mm from muscle tissue or muscle tissue covered by a thin layer of fat tissue. A limited volume of muscle tissue is heated at a greater rate than the fat layer as shown by a thermographic technique.

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