Abstracts

Coupled TLM-thermal analysis in the time domain

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A coupled time domain TLM-thermal analysis technique is presented in this paper. It is a hybrid combination of algorithms comprising TLM, FDTD and ray optical algorithms for evaluating the transient thermal behavior of objects placed inside a cavity or waveguide. Electromagnetic fields are calculated using a GSCN 3D TLM algorithm. We have developed the analysis procedure primarily for evaluating power handling capability of waveguide and microstrip structures. Nevertheless, this procedure can be applied to general microwave heating problems.

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