Abstracts

Design and optimization of CPW circuits using EM-ANN models for CPW components

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Accurate and efficient electromagnetically trained artificial neural-network (EM-ANN) models have been developed for coplanar waveguide (CPW) circuit components. Modeled components include: CPW transmission lines (frequency dependent Z/sub 0/ and /spl epsiv//sub re/), 90/spl deg/ bends, short-circuit stubs, open-circuit stubs, step-in-width discontinuities, and symmetric T-junctions. These models allow for circuit design, simulation, and optimization within a commercial microwave circuit simulator environment, while providing the accuracy of electromagnetic (EM) simulation. Design and optimization of a CPW folded double-stub filter and a 50-/spl Omega/ 3-dB power divider circuit using the developed CPW EM-ANN models are demonstrated.

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