Abstracts

Global coupled EM-electrical-thermal simulation and experimental validation for a spatial power combining MMIC array (2002 Vol. III [MWSYM])

W. Batty, C.E. Christoffersen, A.B. Yakovlev, J.F. Whitaker, M. Ozkar, S. Ortiz, A. Mortazawi, R. Reano, K. Yang, L.P.B. Katehi, C.M. Snowden and M.B. Steer. "Global coupled EM-electrical-thermal simulation and experimental validation for a spatial power combining MMIC array (2002 Vol. III [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 2177-2180 vol.3.

The first fully coupled electromagnetic-electro-thermal global simulation of a large microwave subsystem, here a whole spatial power combining MMIC array, is described. The modeling effort is supported by parallel developments in electro-optic and thermal measurement. The CAD tools and experimental characterisation described, provide a unique capability for the design of quasi-optical systems and for the exploration of the fundamental physics of spatial power combining devices.

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