Abstracts

Reduction of substrate-mode effects in power-combining arrays

A. Al-Zayed, R.R. Swisher, F. Lecuyer, A.C. Guyette, Qi Sun and M.P. De Lisio. "Reduction of substrate-mode effects in power-combining arrays." 2001 Transactions on Microwave Theory and Techniques 49.6 (Jun. 2001, Part I [T-MTT]): 1067-1072.

We report a simple theory for the reduction of substrate modes in quasi-optical power-combining arrays. This qualitative theory predicts that detrimental substrate-mode effects can be greatly reduced through a judicious choice of the array unit cell size. Experimental evidence from quasi-optical tripler grids is presented to confirm the theory. Measured results show a dramatic improvement in the radiation pattern and effective radiated power of arrays with both grounded and ungrounded substrates.

❑ Return to main document.