Abstracts

Quasi-Optical Power Combining of Solid-State Millimeter-Wave Sources

J.W. Mink. "Quasi-Optical Power Combining of Solid-State Millimeter-Wave Sources." 1986 Transactions on Microwave Theory and Techniques 34.2 (Feb. 1986 [T-MTT]): 273-279.

Very efficient power combining of solid-state millimeter-wave sources may be obtained through the application of quasi-optical resonators and monotfthic source arrays. Through the theory of reiterative wavebeams (beam modes) with application of the Lorentz reciprocity theorem, it is shown that planar source arrays containing 25 individual elements or more result in very efficient power transfer of energy from the source arrays to the fundamental wave-beam mode. It is further shown that for identical sources within a properly designed quasi-optical power combiner, the output power tends to increase much faster that number of source elements.

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