Abstracts

Combining the Powers from Multiple-Device Oscillators

M. Madihian and S. Mizushina. "Combining the Powers from Multiple-Device Oscillators." 1982 Transactions on Microwave Theory and Techniques 30.8 (Aug. 1982 [T-MTT]): 1228-1233.

This paper describes the results of power combining with multiple-device oscillators. A combiner circuit consisting of 3 oscillators and a directional coupler is analyzed. Conditions are set to obtain the maximum combining efficiency and a key approach is developed to control the frequency of the combiner. It is shown that the performance of the system is not seriously affected by the dissimilarity of the oscillators used in the combiner. A prototype 84-diode power combiner is constructed and total output power of 1.72 W with combining efficiency of 98.3 percent is obtained at 9.7 GHz. No fundamental limiting factor for the maximum number of devices to be combined was found.

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