Abstracts

Two-Dimensional Quasi-Optical Power-Combining Arrays Using Strongly Coupled Oscillators

J. Lin and T. Itoh. "Two-Dimensional Quasi-Optical Power-Combining Arrays Using Strongly Coupled Oscillators." 1994 Transactions on Microwave Theory and Techniques 42.4 (Apr. 1994, Part II [T-MTT]): 734-741.

Two-dimensional quasi-optical power-combining arrays are designed by using strongly coupled oscillators. The oscillators are connected by a microstrip coupling line for strong coupling. Two types of connections are discussed. One is the line-structure and the other is the loop-structure. The oscillation modes of the coupled oscillators for these two types of configurations are analyzed and compared. The experimental results for circuits with different configurations are compared to the theoretical results. The application of these two types of connections in the two-dimensional array is discussed. A multilayer (3-D) structure is employed in the circuit design to accommodate the complex layout of the two-dimensional arrays. A 4 x 4 power-combining array in multilayer structure is demonstrated.

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