

Abstracts

A High Power Phase Shifter for Phased-Array Systems

W.P. Clark. "A High Power Phase Shifter for Phased-Array Systems." 1965 Transactions on Microwave Theory and Techniques 13.6 (Nov. 1965 [T-MTT]): 785-788.

The design of a small, lightweight, high peak and average power phase shifter is discussed. To achieve the high peak power handling, a small crystal grain technique was employed that resulted in a 14 to 1 power handling improvement. To achieve the high average power handling, a temperature compensated garnet was used along with a novel direct dielectric liquid cooling technique. The structure used to implement the cooling causes dielectric loading of the garnet material which enhances the microwave performance of the device. The results have provided a device capable of 360° of continuous reciprocal phase shift while operating at signal levels of 115-kW peak, and 600-watts average power.

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