Abstracts

Parallel Push-Pull Hybrid Circuit

M. Miyagi. "Parallel Push-Pull Hybrid Circuit." 1962 Transactions on Microwave Theory and Techniques 10.1 (Jan. 1962 [T-MTT]): 34-40.

This paper deals with a new hybrid circuit for signal branching or combining in parallel push-pull amplifiers. The purpose of the new hybrid circuit is to perform the branching or combining of two pairs of signals for parallel push-pull operation, each consisting of two oppositely phased, balanced signals. The advantage of combining two pairs of parallel push-pull signals by a single component of new hybrid circuit is clear; one would require a multiplicity of conventional rat-race circuits to do the same job, inasmuch as the basic rat-race circuit is limited to only one pair of push-pull signals. The new hybrid circuit is further elaborated to improve the performance for combining unbalanced push-pull signals by: (1) showing that the combination of unbalanced push-pull signals is equivalent to the super-position of cophase components on the balanced antiphase components; (2) analyzing the effect of the cophase components in the hybrid circuit; and (3) devising means of improving the adverse effects of the cophase components. Finally, an evaluation is made of a parallel push-pull amplifier using the new hybrid circuit in comparison with the conventional rat-race circuits required for the same parallel push-pull operation.

❑ Return to main document.