

# Abstracts

## A 1 to 18 GHz Out of Phase Combiner

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*M. Jouanneau-Douard, H. Brouzes, S. Bionaz and D. Levy. "A 1 to 18 GHz Out of Phase Combiner." 1992 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 92.1 (1992 [MCS]): 83-86.*

This paper presents the design, realization and performance of an ultra wide band 180° MMIC combiner. The circuit design is based on a simple original principle combining common-source and common-drain transistors to achieve wide band phase shifting and output matching. Realization of the MMIC, conducted at Thomson Composant Microondes GaAs facility, has shown very good agreement between simulated and measured performance. In the 1 to 18 GHz bandwidth, amplitude balance between the two paths is better than 0.5 dB while phase difference stays at 180° with a maximum error of 10° at 18 GHz.

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