Abstracts

Analysis of balanced active doubler for broad-band operation - the frequency-tuning concept

B. Piernas, K. Nishikawa, T. Nagagawa, H. Hayashi and K. Araki. "Analysis of balanced active doubler for broad-band operation - the frequency-tuning concept." 2002 Transactions on Microwave Theory and Techniques 50.4 (Apr. 2002 [T-MTT]): 1120-1126.

A comprehensive analysis of an active balanced frequency doubler is described and proposed as a new concept: tuning the center frequency at which the doubler exhibits its highest performance to extend the usable bandwidth of the device. The concept is validated using a fabricated V-band pseudomorphic high electron-mobility transistor frequency doubler. For this device, a substantial improvement in the usable bandwidth (more than double) is achieved, demonstrating that the proposed concept is particularly suitable for the realization of high spectral purity and widely tunable V-band frequency sources.

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