Abstracts

A Novel General Approach for the Optimum Design of Microwave and Millimeter Wave Subharmonic Mixers

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The design of subharmonic mixers is complicated and involves separation of signals and application of correct loading at the important idler frequencies. In this paper we present a novel general approach, which enables the designer to establish the optimum loading conditions for the different signals to get low conversion loss and good matching simultaneously. The method is demonstrated by a design example using a 30 GHz X2 subharmonic mixer. In this example it is shown that a nonoptimal design can yield conversion loss of up to 13.5 db, while an optimal design yields a conversion loss of 3.6 db.

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