Abstracts

The Design and Synthesis of a Class of Microwave Bandpass Linear Phase Filters

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This paper is concerned with the design procedure and synthesis of a class of microwave bandpass linear phase filters which simultaneously exhibit a maximally flat amplitude and delay response about band center. In the first part of the paper a systematic procedure is developed for the construction of a nonminimum phase transfer function which exhibits a maximally flat delay and maximally flat amplitude characteristic. In the second part, a synthesis procedure is presented for the realization of the general nth-ordered transfer function by a generalized interdigital network. To simplify the design and construction of this filter, typical characteristics for filters of degree n = 3,4,5,6,7 are graphically presented together with a tabular representation of the polynomials which are required to design the filter. Finally, the results of an experimental filter of degree 3 are incorporated to illustrate that this class of nonminimum phase filters may readily be constructed in practice.

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