# Abstracts

## A Generalized Multiplexer Theory

A general direct analytical design process is presented for multiplexers having any number of channels with arbitrary channel complexity, bandwidths, and interchannel spacings. The theory assumes initially that independent doubly terminated designs are available for the individual filters, and formulas for modifications to parameters associated with the first two resonators are developed to match the multiplexer. These formulas are approximate, and the limitations of the theory are indicated with several computed examples. The theory is applied to the design of a five-channel interdigital multiplexer. A first-stage immittance compensation scheme is described which improves the design for limiting cases, but the theory of complete immittance compensation which handles even contiguous channel operation is reserved for a companion paper.

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