Abstracts

Reflectionless Broad-Band Matching Networks Using a Diplexer Approach

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A method is presented for generating networks which match an RC load with prescribed gain equalization while simultaneously providing good match. The technique involves the synthesis of two network conductance functions, one of which forms the input conductance of the matching circuit, and a second network which realizes the complimentary conductance. When placed in parallel, the resulting network provides constant, real input impedance, and when driven from a resistive source, provides intended gain equalization. This method has potential advantage over the classical method of balanced, reflection-equalized amplifier networks, for reduced size and lower loss, and is ideally suited for MMIC application since the need for physically large couplers is eliminated. This method preferable over the present heuristic lossy-match approaches, since it is theoretically sound and permits optimal gain-bandwidth design.

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