Abstracts

Decomposition synthesis approach to design of RF and microwave active circuits

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The paper presents a new decomposition synthesis method for designing linear and nonlinear active high-frequency circuits. This method allows the synthesis of passive correction (matching, compensation, feedback, etc.) networks from circuit performance specifications, with a circuit block diagram given. The method forms the basis of unified synthesis procedure for a wide range of RF and microwave active semiconductor circuits. Statements of problems at the synthesis stages are formulated and methods and algorithms for solving these problems are discussed. Also, we overview our research results with application to designing RF/microwave transistor amplifiers. CAD tools for transistor amplifiers and passive matching/compensation networks were implemented; they were used to design amplifiers of various types and structures.

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