Abstracts

Review of Printed Marchand and Double Y Baluns: Characteristics and Application

V. Trifunovic and B. Jokanovic. "Review of Printed Marchand and Double Y Baluns: Characteristics and Application." 1994 Transactions on Microwave Theory and Techniques 42.8 (Aug. 1994 [T-MTT]): 1454-1462.

A review of printed baluns is presented. This is divided into two main groups; Marchand baluns (band pass networks) and double Y baluns (all pass networks). For each of these groups of baluns, three different realizations are given: microstrip-slot line, CPW-slot line and CPW/sub FGP/-CLS and their theoretical and experimental characteristics are compared. Simple expressions for the design of Marchand baluns with Chebyshev response, which replace the complicated synthesis proposed by Cloete are derived. Superior broadbandwidth features of double Y baluns are demonstrated in the design of two uniplanar double balanced mixers. Both the double Y mixer and the CPW/sub FGP/ -CPS mixer have a frequency bandwidth 1:6, whilst maintaining other performance similar to that achieved with classical double balanced mixers.

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