Abstracts

Circular and Annular Sector Planar Components of Arbitrary Angle for N-Way Power Dividers/Combiners

F.A. Alhargan and S.R. Judah. "Circular and Annular Sector Planar Components of Arbitrary Angle for N-Way Power Dividers/Combiners." 1994 Transactions on Microwave Theory and Techniques 42.9 (Sep. 1994, Part I [T-MTT]): 1617-1623.

Previously derived Green's function for circular and annular sectors restricted the sector angle to an integer submultiple of n pi. In this paper, using the single series Green's function approach, the Green's function is shown to hold for arbitrary sector angles. The removal of this restriction enables an effective sector angle to be introduced, which then can be used to account for the fringing fields. It is shown that the fringing fields at the straight edges of the sector are responsible for the unequal power division obtained experimentally, and thus by accounting for the fringing fields in the design, it is possible to eliminate the unequal power division. Experimental and theoretical results are in good agreement.

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