Abstracts

Nonsymmetrical Coupled Lines of Reentrant Cross Section (Correspondence)

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Frequently, UHF and microwave TEM components require tightly coupled transmission lines, directional couplers of greater than -8 dB coupling, narrow-to-moderate-bandwidth bandpass filters, moderate-to-widebandwidth stopband filters, and 90-degree phase shifters are some examples. The novel geometry of the directional coupler with reentrant cross section can result in very tightly coupled transmission lines and has been proved practical and useful. Recently, the basic geometry and the corresponding design equations for directional couplers with reentrant cross section were extended to provide a slightly more general geometry capable of even greater coupling with practical physical dimensions. However, in the afore-mentioned cases, only symmetrical geometries and their related equations were presented. In this correspondence, the basic reentrant cross-sectional geometry and associated equations are generalized to include the nonsymmetrical case which is important for nonsymmetrical directional couplers and coupled strip transmission-line filters requiring coupled non-symmetrical lines.

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