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Transforming Butterworth Low Pass Filter into Microstrip Line Form at LC-Band Applications

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Abstract : The paper implementation new approach method applied into transforming lumped element circuit into microstrip line form for Butterworth low pass filter which is operating at LC band. The filter's lumped element circuits and microstrip line form were first designed and simulated using Advanced Design Software (ADS) to obtain the best filter characteristic based on S-parameter and implemented on FR4 substrate for order N=3,4,5,6,7,8 and 9. The importance of a new approach of transforming method as a correction factor has been considered into designed microstrip line. From ADS simulation results proved that the response of microstrip line circuit of Butterworth low pass filter with fringing correction factor has an excellent agreement with its lumped circuit. This shows that the new approach of transforming lumped element circuit into microstrip line is able to solve the conventional design of complexity size of circuit of Butterworth low pass filter (LPF) into microstrip line.

Keywords : Butterworth low pass filter, number of order, microstrip line, microwave filter, maximally flat
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