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Abstract

Filters are the key components in communication system. Compactness of filters is an important design constraint. Due to limitations in design methods for filters at low frequency, several newer techniques for filter design at higher frequency are invented. Hybrid microstrip coplanar waveguide technique among these techniques gives a way to design a compact filter structure meeting the required (UWB) specifications. In this paper, a filter based on hybrid

microstrip coplanar waveguide structure is designed. The passive elements are realized using the microstrip, coplanar waveguide (CPW) and transitions between microstrip and CPW. A high pass filter prototype and a connecting capacitor between input and output ports is used to design a UWB bandpass filter having three transmission poles in UWB band. Capacitor acts as a controlling element for UWB band. Quasilumped microstrip structure is used to realize high pass filter elements and connecting capacitor can be realized using parallel coupled microstrip stubs. The coupling between top microstrip and bottom CPW helps to get a flat band within 3.1 to 10.6 GHz.

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Refer

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- Mentor Graphics IE3D electromagnetic simulator.

Computer Science

Index Terms

Wireless Communications

Keywords

Microstrip Coplanar Waveguide Ultrawideband Bandpass Filter Coupling High Pass Filter.