DESIGN OF BANDPASS FILTER FOR RF APPLICATION

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ABSTRACT

The focus of this project is to design, simulate, fabricate and measure the bandpass filter. The filter is synthesized to have the following specifications; an insertion loss of not exceeding 3 dB in its pass band and more than 40 dB in the stop band and also the voltage standing wave ratio less than 2. It is designed to operate at its center frequency of 5.5 GHz with a bandwidth about 10% of its center frequency, and consists of 5 elements that follow Chebychev topology.

The filter is simulated by using software called Genesys, then be fabricated on Roger 4350B that has a relative permittivity of 3.48 and substrate thickness of 1.423 mm. The microstrip filter is measured using Vector Scalar Analyzer (VNA) which then shows good agreement with the simulation results.

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