

DESIGN OF MULTIBAND BANDPASS FILTER FOR WIRE
APPLICATION

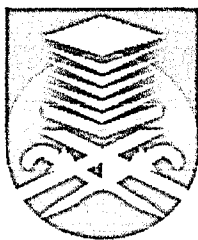
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Thesis presented in partial fulfillment for the award of the
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ABSTRACT

In this project, a multilayer stripline interdigital-hairpin bandpass filters for wifi application has been proposed. By using the multilayer configuration technique in microwave filter design, it will effectively reduce the size, increase the bandwidth and eventually increase the performance of the filters. The design of four-pole double layer and six-pole triple layer of bandpass filters using the proposed structures are provided to see the comparison between the two filters. The center frequency of both multilayer bandpass filters are set to 2.4 GHz which is equivalent to wifi application. The filters are designed using Chebyshev filter with passband ripple of 0.01dB. Based on the results obtained the fractional bandwidth of four-pole double layer bandpass filter and the six-pole triple layer bandpass filter are 41% and 83% respectively. The Rogers RT/Duroid 5880 with a 0.508 mm substrate thickness and a relative permittivity of 2.2 is used to build the filter. The simulation of this multilayer bandpass filters was performed using CST Microwave Studio simulator software.

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