MULTILAYER COUPLED RING RESONATOR FILTER

Thesis presented in partial fulfillment for the award of the
Bachelor of Electrical Engineering (Hons)
UNIVERSITI TEKNOLOGI MARA

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ACKNOWLEDGEMENT

With the name of Allah SWT, the most gracious and most merciful. Thanks to Him for giving me courage in order to complete my final year project. I would like to thank my mother Rothiah Binti Zahan and my father Muhamad Arif B Abdullah. They have always emphasized the importance of strong education and spiritual values. I would like my appreciation my project advisor, Pn. Robi'atun Adayiah Bt. Awang. She has been actively involved in many aspects of this project and has provided many intellectual contributions to this research.

Special thanks to my senior students, Mohd Ali Maghpur B. Muhammad, Mohd Haziq Bin Mokhtar and Adam Bin Azmi for guiding me to use CST Microwave Studio software and then full credit is given to Microwave Technology Centre Lab that gives me chances of doing a measurement to my project. Lastly, thanks to my beloved friends, Nurul Aimi Bt Sulaiman and Nurul Aishah Bt Bachok for giving me support.

ABSTRACT

The purpose of this project is to design and simulation of multilayer microstrip bandpass filter based on coupled ring resonator. This filter is presented by cascading a ring resonator for a results of a wider bandwidth used for wideband applications. This filter is centered at 2.58 GHz with fractional bandwidth of 7.13% from 2.4752 GHz to 2.6589 GHz on 0.75 mm thick Rogers RO3003 substrate with dielectric constant of 3, loss tangent of 0.0013 and 0.035 copper thickness. Multilayer filter technology used to meet the challenges of meeting size, performances and cost requirements.

The Computer Simulation Technology (CST) is used to simulate filter responses. Results from the simulation filter involving return loss, Sn and insertion loss, S21 are revealed through this project. The value of Sn and S21 are -27.299 dB and -0.5246 dB respectively at the operated center frequency. The proposed filter has the advantages of broader fractional bandwidth greater than 5%, small dimensions and sharper rejection.

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