

# **BOTTOM-COUPLED PARALLEL-CASCADED RING RESONATORS PASSBAND FILTER**

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



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## ACKNOWLEDGEMENTS

In the Name of Allah, the Most Gracious, the Most Merciful.

First of all, I would like to express my greatest gratitude to ALLAH the Almighty, for His help and guidance during the course of life and moment of truth.

I would like to express my appreciation and sincere gratitude to my supervisor, Dr Mohd Khairul Mohd Salleh for his continual support, endless encouragement and patience towards completing the research and for allowing the chance to work under his guidance, opinion and full support in completing this project. Without his superior knowledge in this field of study, this project might not be done properly. All the kindness and understandings will always be remembered.

Appreciation also goes to all my colleagues from Universiti Teknologi MARA for their helps and encouragement.

My greatest appreciation to very important persons in my life is my family that gives me a lot of moral support and encouragement.

Last but not least, to Prof. Dr. Zaiki Bin Awang and his staffs of Microwave Technological Centre (MTC) for providing all the facilities to carry out this project and to all others not mentioned but whose help been tremendous, I express my sincere thanks and appreciation. Thank you.

## ABSTRACT

In this paper, a bottom - coupled parallel - cascaded ring resonators passband filter is designed at 3GHz center frequency. Based on ring topology, the filter is design by cascading of two ring resonators with two coupled lines are connected in parallel at the input and output port. The purpose of this new topology design is to know the response of the filter. The number of poles will be increased from 2<sup>nd</sup> order to 4<sup>th</sup> order because of having the cascading ring resonators and two of coupled lines. The filter is realized using FR4 substrate with a relative dielectric constant of 5.4, thickness of 1.6 mm and loss tangent of 0.02.

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