

THE EFFECT OF DIFFERENT CROSSING ANGLES  
ON SIMILARITY AND STABILITY OF TARGET SPECTRA  
IN FORWARD SCATTERING MICRO RADAR (FSMR)  
USING GRAPHICAL USER INTERFACE (GUI)

This thesis is submitted in partial fulfillment for the degree of the  
Bachelor of Engineering (Honours) in Electronic (Communication)  
UNIVERSITI TEKNOLOGI MARA (UiTM)



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## Acknowledgement

First and foremost, I would like to express my highest acknowledgement to God, for his greatness and permission, that I am able to complete my project. Outmost thanks goes to my beloved parents for their moral support for their continuous motivation and encouragement throughout my life.

Highest appreciation is dedicated to my supervisor, Dr. Nur Emileen Abdul Rashid for her visionary guidance, insightful counsel and constant encouragement regarding to the final year project. This project will not be successful without the cooperation and contribution from others who provide the relevant information. Millions of thanks to Mr. Mohd Noor Nasriq bin Nordin who had mentored me on MATLAB Graphical User Interface (GUI).

Last but not least, I would like to express grateful feeling to all my course mates who have contributed directly and indirectly in making this final project a success. Not to forget, Universiti Teknologi MARA and Faculty of Electrical Engineering for the opportunities they have been giving me to fulfill my dream.

## Abstract

This project highlights the simulation by using MATLAB to identify the effect of different crossing angles on target spectra in Forward Scattering Micro Radar (FSMR) for ground target detection. The main objective is to model and compare the target signatures of moving ground target without the presence of clutter and other external factors that might affect the signals in actual radar sites. FSMR operates at low carrier frequencies within the VHF and UHF bands using omnidirectional antennas. Ability to detect small and stealth target, the use of distributed FSR sensors network that can offers number of interesting features such as detection and classification of target even at low frequency, small and light weight. This makes FSMR an interesting topic to learn about. The algorithm is developed based on Fourier transform for features transformation from time domain signal to power spectrum density. Besides that, new software in producing the target signatures is developed by using Graphical User Interface (GUI) in MATLAB which can be used as a learning material in universities. Therefore, by completing this project with novel features will definitely give a lot of benefit to radar development generally.

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