

UNIVERSITI TEKNOLOGI MARA

**MICROSTRIP ANTENNA FOR ADS-B
SYSTEM**

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Dissertation submitted in partial fulfilment of the requirements
for the degree of
Master of Science

Faculty of Electrical Engineering

July 2017

ABSTRACT

This thesis will discuss on designing and fabricating an Omnidirectional antenna operating at Very High Frequency for Automated Dependant Surveillance Broadcasting (ADS-B) System. The antenna will resonate at 1090 MHz and was design with mixture of two methods, there are defected ground structure (dumbbell shape at the ground) and fractal shape at the patch antenna.

The size of the proposed antenna after completed design phase by using CST-WMS 2015 is 71 mm x 65.52 mm and the resonance frequency of 1090 MHz. The size reduction to 20% from the conventional approach due to the implementation of DGS and Fractal Shape to conventional antenna. This antenna produced an omnidirectional radiation pattern with 1.661 dB gain and 11.42% bandwidth base on simulation result. Agreement between simulated and measured results is provided a better achievement.

Keywords: Patch antenna, VHF (Very High Frequency), Omnidirectional, Defected Ground Structure, Dumbbell shape, Koch Island.

ACKNOWLEDGEMENT



Foremost, I would like to express my sincere gratitude to Allah S.W.T, my wife and children for the continuous support of my master study and research, for their patience, motivation and enthusiasm. I want to express my sincere gratitude and appreciation to my project supervisor Assoc. Prof. Ir. Dr. Ahmad Asari Sulaiman his guidance helped me in all the time of this project and writing of this thesis. I could not have imagined having a better supervisor and mentor for my Master study. I thank to lab Antenna Research Group (ARG) and the lab assistant in Univesiti Teknologi MARA Mr. Khalim and Mr. Hamizan with the continues support. Besides that, thanks to my officemate Miss. Siti Nurfarhanah Azizul Azlan, Mr. Kamil and Mr. Husnulbazli for their support to completed this thesis Last but not the least, I would like to thank my family: my mother Mrs. Salmah Yati and my wife Mrs. Kamaliana Mohd Nooh, for supporting me spiritually throughout my life.

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