

ABSTRACT

The development of communication technology in the modern world increasingly fast and diverse, so much new technology standards emerge and more sophisticated. The antenna was instrumental in the development of telecommunications in particular telecommunications with radio waves. The antenna in this case as devices that are directly related to the transmission medium of communication is indispensable utility. The antenna is generally defined as a modifier of the guided wave which is passed through the transmission line into free space wave and vice versa.

Microstrip antenna is one type of antenna is shaped board (board) is thin and capable of working at very high frequencies. This antenna has a pattern layer (pacth) with a variety of forms, one of which is a form sierpinski carpet. This form has a very compact structure and easy dipabrikasikan and integrated with the circuit below. But this antenna has several deficiencies which have a small bandwidth and gain. To cover this shortfall, the antenna will be modified so that it can overcome the shortage. And also this antenna using alumina substrate (Al₂O₃) using a technology think a movie.

From the results of the design using Ansoft HFSS 9.2 is obtained in accordance with the specifications of the antenna, with a limit of VSWR ≤ 2 with a multiband frequency. After doing the design in Ansoft HFSS 9.2, made the realization of the antenna with thick film technology to subtract material alumina (Al₂O₃) and the use of silver as a conductor. Results from the measurement antenna is not much different realization of the antenna simulation results, the difference is due to the environment during the measurement which is not ideal. Because of this, the measurement should be done in a room without echoes like anechoic chamber so as to produce a measurement value in accordance with Ansoft HFSS 9.2 simulation.

Keywords : *Sierpinski Carpet, multiband, Alumina (Al₂O₃), Thick Film.*