

ABSTRACT

In telecommunication, antenna has an important rule. And it is in line with the increase of antenna development. In an effort to efficiency, developed an antenna that has the characteristics of relatively small dimensions and also reliable by considering the values of antenna parameters such as bandwidth, gain and radiation patterns are adjusted to the needs of one of them, is an of microstrip array antenna fractal patch. Microstrip array antenna fractal patch is an antenna that is able to work well on several different resonant frequencies and also has a gain that is higher than a single microstrip. This is very useful for cellular and WLAN communications

With in this final project, there are some simulations of some fractal antennas using HFSS software. HFSS (High Frequency Structure Simulator) is a software which is usually used in antenna design, simulation and analysis. Because it has high accuracy and capable of being used in complex design. The simulated fractal antenna in the array level and the order, then compared with each other.

Because the antenna parameter values highly correlated with the quality of the antenna that we make then we need a study for it so we can produce antennas that fit the needs and also facilitate in the design. In this thesis, we have performed experiments and simulation of various forms of fractal antenna and also levels of the different arrays are also using the simulator High Frequency Structure Simulator (HFSS) where the simulation results can provide the information effect of rate changes and the order of fractal arrays of antenna parameters. The simulation results show that higher levels of the array and the order will result in smaller values of bandwidth, the higher the gain, the more tapered or more unidirectional shape the radiation pattern and also result in increasing the number of sidelobe and backlobe.

Keyword : *Fractal antenna, Fractal orde, HFSS, Bandwidth, Gain, Radiation pattern, sidelobe, backlobe*