Abstract

In this final project author makes a design, a simulation and realization of a square patch microstrip antenna at Ku-band frequency band for satellite communications. Ku-band frequency band has a frequency range of 12 GHz – 18 Ghz, the application of the Ku-band for satellite communication system was developed because with this frequency broadband applications could be better used. The usage of this device is only for receiving signals from the satellite (receiver).

This final project begins by calculating the dimensions of the antenna according to the existing formula. Then the will be used in the simulation process. Modification of the antenna dimensions is used as a way to get optimum results in the simulation, then the optimum dimensions are used in the manufacturing process. Then after manufactured, through the measurement process obtained the antenna parameters such as VSWR, polarization, radiation pattern, gain dan bandwidth. Then analyzed the results of the comparison between simulation and measurement results.

After all the process, the final result proved that this antenna can work at frequency of 13.02 GHz using EPOXY FR4 (ε_r)as its substrate the conclusion are this antenna have VSWR= 1.21, bandwidth 655MHz, gain of 4.28 dBi, with elliptical polarization and unidirectional radiation patterns.

Keyword : Microstrip Antenna, Square Mikrostrip, Ku-band