

ABSTRACT

The antenna is one of the components that have a very important role in communication systems. The antenna is a transition area between the transmission line and free space, so that the antenna functions as a transmitter or receiver of electromagnetic waves. Microstrip antenna is currently widely used in a variety of telecommunication applications. This is because the microstrip antenna has several advantages, namely, form a practical, lightweight, easy to design and fabrication.

This final project will be designed a array microstrip antenna with 1x2 rectangular patch using Alumina substrate (Al_2O_3) with a relative dielectric constant of 9.6 in 0.7 mm thick substrate .

For the simulation of antenna that would be made, the authors use the software CST Studio 2010 to obtain the desired specification. The manufacturing of antenna would be performed by using thick film technology. In this design shows that the antenna works at S - band frequencies, working in the frequency range 2.97 – 3.03 GHz with the results of VSWR : 1.057, bandwidth : 76 MHz, gain : 3.23 dBi, and a unidirectional radiation pattern.

Keywords : Alumina, *Thick Film, S-Band, Unidirectional*