

## **ABSTRACT**

*Increasingly rapid development of communication technology and diverse, so the new emerging technology standards and increasingly sophisticated. In a communication antenna generally present. Wherein the antenna into two parts, the transmitter antenna and receiver antenna. Both antennas are connected to a circuit. Before the incoming signal to the antenna, there is a system that regulates or divide signals. Power splitter serves to regulate or split the signal to be received by the second antenna. The workings of the power splitter is very simple, but the effect is very large. If a circuit does not use a power splitter, then in the circuit there should be two DRO, and the costs involved will be greater.*

*In this final project will be designed power splitter for x-band radar applications that work at a frequency of 9.75GHz. Starting with the initial stages of the determination of the desired specifications. Then follows the simulation using CST software, after it carried out the printing process on a substrate-Duroid 5880 Rogers then be measured using a network analyzer.*

*Results obtained from the simulation and the realization of the power splitter with Wilkinson's method was to work at a frequency of 9.75GHz. VSWR value obtained was 1,020, the value of the insertion loss is -3.4dB S12 and S21, S13 and S31 to -3.3dB. While the value of the return loss is obtained -39.86dB and insulating value is -18.81dB.*

**Keywords: power splitter, x-band radar, VSWR, insertion loss, return loss, isolation**