

ABSTRACT

Radio Detection and Ranging (RADAR) is used to detect, measure distances, heights and map an object. Because of its ability that RADAR can be used to view objects in the sea and air at a distance of a broad range despite the bad weather such as thunderstorms and fog. RADAR technology is one application that can help agencies and state officials in monitoring and securing the waters of Indonesia. One part that is important is RADAR antenna. This antenna is able to process send-receive signals that detect the presence of an object around RADAR within a certain distance. In this thesis discussed about making an antenna for RADAR ship using techniques rationing microstrip line with the shape of the number eight rectangular patch elements made in composite one eight. To simplify the design process used simulation software CST Microwave Studio 2010. This thesis begins with calculating the dimensions of the antenna according to the existing formula. Dimensional calculation results will be used in the simulation process. Modification of the antenna dimensions are used as a way to obtain optimum results in simulation, then the optimum dimensions used in the manufacturing process. The measurement results show the performance of the antenna with a central frequency of 3.006 GHz, with a bandwidth of 100 MHz, the VSWR 1.002, and has a gain of 10.17 dB.

Keywords: Microstrip Antenna, RADAR, S-Band