

ABSTRACT

Indonesia is an archipelago country where the islands spread from Sabang to Merauke surrounded by oceans. Therefore we need a technology to secure sea and beach in the Indonesian archipelago from illegal logging and fishing. Radar is a technology that can serve as the "eyes" which could "see" objects in the distance. Distance and speed information of the objects could be detected in radar. Radar could work fine despite of inclement weather such as rain storms, and fog. Because of its outstanding ability, radar could be used to view objects in the sea and air at a wide range of distances.

Antenna in the radar system is a crucial component. In this final project which entitled "Design and Realization of Micro strip Antenna Array 1×16 at S-band frequencies for Radar Applications Coast Guard" is trying to discuss the making of antenna using micro strip line rationing techniques in the form of rectangular *patch*. For the process of antennas simulation, the author use SuiteTM CST Studio 2010 and for the realization of the antenna performed is done by experienced with fotoetching technology.

This final task begins by calculating the dimensions of the antenna according to the existing formula. Dimensional calculation results will be used in the simulation process. Modified antenna dimensions are used as a way to obtain optimum results in simulation, then the optimum dimensions used in the manufacturing process. Prototype antenna has a characteristic which is working at a frequency of 2,897 GHz, with a bandwidth of 62 MHz, the VSWR 1.165, and has a gain of 1.2086 dBi.

Keywords: antena mikrostrip, radar pengawas pantai, frekuensi S-Band