

ABSTRACT

Indonesia is an archipelago country consistsof many islands that are located very strategically, so the marine vessel traffic in Indonesian coast area is very dense.Thathas caused security and control of Indonesian coast territory to be quite complicated. The security and control of Indonesian coast territory can be performed by using surveillance radarsthat are mounted all along coastal areawhich can oversee all coast areas of Indonesia.

In this final project discusses about design and realization of and antenna that can support coastal surveillance radar application. In the third chapter described the performance comparison of the four antennas are derived from four different materials, the calculation process is attached at Appendix A and analysis of material attached at Annex B. In chapter four to calculate the performance of the antenna, the parameters are viewed VSWR, gain, bandwidth, radiation pattern, impedance and radiation pattern.

This final project begins with calculating dimension of the antenna using function that define antenna's dimension. The calculation results will be the input of simulation. The best results of some modification on antenna simulation will be used as dimension value on antenna fabrication.This antenna prototype has characteristic which is work at frequency 9,4 GHz with 350 MHz bandwidth frequency for VSWR $\leq 1,4$, 10,51dBi of Gain and less than 14° of HPBW

Key words: Array Microstrip Antenna, Coastal Surveillance Radar, Bandwidth, VSWR, HPBW