

ABSTRACT

To oversee Indonesia sea areas which covers two third of total Indonesia territory is not easy job. Several threats that comes from illegal fishing, sea sand theft, piracy, up to oil resource smuggling have been expressing the need of technology to monitor and to detect various kinds of activities on sea areas. Coast guard radar becomes solution of that problem through installing this radar along the Indonesia coastline so that it is useful in overseeing Indonesia territory for wide range.

In this research, describe about planned and realized a antenna mikrostrip which supports the technology of coast guard radar. The making of this antenna uses rationing *probe coaxial* in the form of *patch rectangular* as many as 16 elements that is made in multilevel two times eight. *Software* that will be used for antenna design is *software CST Microwave Studio 2010*.

From the simulation results using CST Microwave Studio 2010 software, the antenna works in the frequency range from 2.97 to 3.03 GHz with $VSWR \leq 2$, Bandwidth of 61.5 Mhz, 13.51 dBi Gain, Radiation Pattern Unidirectional and Linear Polarization. While the measurements, which are designed antenna has $VSWR \leq 2$, at 60 Mhz bandwidth, Radiation Pattern Unidirectional, Linear Polarization with AR value of 66.094 and 12.945 dBi Gain achieve.

Key words: Mikrostrip antenna, coast guard radar, *Bandwidth*, *VSWR*, S-Band